THE SCHOOL REVIEW
A JOURNAL OF SECONDARY EDUCATION

VOLUME XVII
NUMBER 3

MARCH, 1909

WHOLE
NUMBER 163

RELATION OF INDUSTRIAL TO GENERAL EDUCATION

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CULTURE AND DISCIPLINE

By general education is meant that which deals at least in outline with all the essentials of complete living. It embraces not only language and mathematics, but also science, art, and history. It includes, moreover, not only knowledge of these essentials, but also efficiency in the application of this knowledge to the corresponding affairs of life. The two words by which it conjures are *culture* and *discipline,* even if it does not always define what it means by them. Culture is a product of insight, and discipline of training to efficiency. By insight is meant the intellectual apprehension involved in mastering a system of ideas. Insight in the study of a language includes more than the power to construe and translate, for it embraces also a perception of the value of the study as seen in literature, history, and art. In chemistry it means not only a grasp of chemical laws as such, but also of the significance of these laws in the organic, the inorganic, and above all in the economic world. Men long since observed that out of this ever broadening insight into the relations of things there grows a refining influence which affects speech, emotions, and conduct, and this result it calls *culture.* Culture may therefore be defined as the total refining effect—intellectual, emotional, and volitional—produced by insight into

what is learned. The quality of culture depends upon the nature of the subject-matter, that arising from one study, say language, differing from that of another, say biology, or mathematics. The quantity of the culture depends upon the scope and depth of the insight; for an insight into language, mathematics, science, history, and art gives a broader culture than the study of any one or two of them alone, while a deep insight is proportionally more cultural than a shallow one. A general education, therefore, provides the conditions for a culture that shall at all events be broad and symmetrical in scope, whatever may be its restrictions in intensity, or depth.

If culture is a product of insight, discipline is a product of the training for efficiency. By *efficiency* is meant the power to use effectively the knowledge involved in insight. A mind is disciplined in language, in mathematics, in science, when it can use effectively the knowledge it has in these subjects. We use language to acquire and to express ideas, mathematics to solve quantitative problems, science to meet adequately the conditions for preserving and enhancing the value of life. The quality of discipline, like that of culture, depends upon the nature of the subject-matter, discipline through the study of linguistics having a very different quality from that acquired through a training in history, art, or biology. The quantity of discipline gained through education depends, likewise, upon the scope and intensity of the training for efficiency. Here again it is apparent that general education provides for all the chief types of discipline, since it trains to efficiency in all the great departments of knowledge.

As an abstract proposition, there can be little doubt that every educated man should have a good solid substratum of the culture and discipline that can be acquired only through study and practice in all the chief representative subjects found in the curriculum, though there always comes a time when general should give place to special training. Some find this at the close of four years of college work, some at the close of two years of such education, some at the close of the high-school period—when most technical students begin their professional education;

while it is conceivable that with large numbers it should be found even before the end of the grammar-school course. President Jordan now declares that an aimless (i. e., a general) education in the university is a useless education, and proposes to eliminate the freshman and sophomore classes from the university over which he presides, requiring all other students to begin at once their special preparation for some particular calling or profession, as in a German university.

It is commonly assumed that industrial, like any branch of special, education is non-cultural and but slightly disciplinary, but this assumption needs qualification, for though in special education insight and efficiency may be restricted in range they are certainly deepened in intensity. This is the educational meaning of concentration of effort to a narrow field. No type of special training can be deemed educative that does not exercise the mind while developing technical skill. Consequently there is no such sharp antithesis between special and general education as has been so often assumed. Both give culture and discipline, for both give insight and skill. The difference is that culture and discipline are more diffused in general and more intensified in special education.

POSSIBILITY OF GENERAL THROUGH SPECIAL EDUCATION

Another fact that further softens the opposition between general and special education in their cultural and disciplinary effects is that specialities may be so studied that they have much the same educational value that more general studies have. This is well illustrated in higher education by the comparative method, whereby a specialist often gets a much broader view of the world than at first seems probable. An architect, for example, must know the history of architecture, which is intimately related to the history of art in general to that of peoples. He must be gifted in drawing, trained in mathematics, instructed concerning mechanics, building materials, and heating and ventilating buildings, and he must be trained in original design of the structures he hopes to erect. An engineer in addition to the technique of his profession must know mathematics and the fundamental

natural sciences, and he must be at least acquainted with the social and economic conditions which determine his undertakings. Happily professional coincides largely with general education in the training of the teacher. So, in due measure, all special education which follows the acquisition of the school arts has its own not inconsiderable measure of culture and discipline. The rule should be, general education as long as we can get it; special education as soon as no other will be taken. Under present conditions probably only from one-half to two-thirds of the pupils who enter the elementary schools finish them. Less than one-fifth of those who enter the high school complete the course. What becomes of the eliminated? The answer is that they go, for the most part, to swell the ranks of unskilled labor. Since so large a number of students is involved, it is well worth our while to inquire whether it is not possible so to broaden this more elementary special education that its educational effect may be not unlike that produced in higher education by the comparative method.

The German continuation schools have recognized the value and practicability of this idea, and actually make the instruction in these classes well-nigh as liberalizing in its tendencies as that of a corresponding amount of secondary instruction in the regular schools. This result is effected by moving out in every direction from the center of interest found in the special branch pursued by any given body of students. In the continuation schools at Halle, two years ago, there were thirteen trades and callings represented; in those of Munich about forty. Each of these trades becomes an independent center, from which there radiates a study, not only of the best technique of the subject, but of all closely related phases of business, social, and even political life. To illustrate, we may take the class of bakers' apprentices in the continuation schools at Halle. Their reading-lessons, instead of spreading over the field of general literature, all radiate from the center of their special interest. The first part is devoted to the cereals that are used by the baker in preparing food for men, and opens with a poem by Welcker on "Our Daily Bread." These selections, written in literary style both in prose and verse, pertain

to such subjects as "Grain," "The Food Cereals of Various Peoples," "The Evening Meal," "The Grinding of Grain," "The Invention of Oleomargarine" (with a tribute to Napoleon III), "The Production of Raisins among the Turks," "Almonds," "About Sugar" (its production and use), "Common Salt," "Vanilla." The second part treats of manufacture of bread products from the raw materials. Here the theory and practice of baking in all their essential elements are taken up, including descriptions of implements, ovens, fuels, barns, sanitation, bakeries, all varieties of baked products, the physiological study of breads as diet, poisons, descriptions of great bake-factories, like that of the Shredded Wheat industry in Niagara Falls, etc. The third part presents historical sketches concerning the bakery and its products.

A similar reading-book is prepared for each trade. In like manner, each class has an adequate series of number lessons relating to its special business, somewhat in the form of our commercial arithmetics. Their drawing likewise is made to serve the specific needs of each trade or occupation. In short, everything that is done in these schools starts from and always returns to the specific aim of the given class, yet so many human and scientific relationships are established that the training becomes in large measure general. Climb a mountain peak and the whole cyclorama lies before and beneath you. Climb any other neighboring peak, and though the standpoint has changed, it is still the same landscape.

Need we therefore have a bad educational conscience concerning culture and discipline because special trade or other vocational courses are to be provided for them? It is hard to find any ethical basis for such a state of mind, whether we contemplate the woeful economic and social fate of these millions without such training, or the national results of such waste of economic resources, or the pedagogic desire to impart a special type of culture and discipline to all.

Should the foregoing argument prove to be well founded, we may dismiss most of our scruples concerning the amount and quality of culture and discipline that may be furnished by

rationally conducted special schools, and turn our attention to other aspects of the subject.

A NEW TYPE OF EDUCATION NEEDED FOR THE MILLIONS

It is a commonplace of educational thought that in the main the school is now called upon to utilize the time and supply the training once provided by the various forms of industrial labor both rural and urban. The education of more recent generations was both intellectual (for short periods of the year) and industrial, through the performance of useful work. With more remote generations all the training the masses received came through their labor. For reasons well understood, the school has responded to this double demand by doubling the time and quantity of intellectual education, and excluding altogether the industrial element. This is working fairly well for the classes intellectually gifted or economically well endowed. For the masses it works badly chiefly for two reasons: first, because it fails to improve greatly their economic position, and second, because it makes but a feeble appeal to permanent intellectual interests, since it ignores so completely all social experience in the development of insight and efficiency. It abandons natural for artificial stimuli, and then bewails the waste.

The Report of the Massachusetts Commission on Industrial and Technical Education finds that the years from fourteen to sixteen are for the individual in industrial pursuits largely wasted years, since for one thing they yield but a trifling income, but chiefly because they fix the permanent status of the worker in the ranks of unskilled labor. This the commission rightly consider a calamity—not only to the person himself but also to the industrial community itself. To check permanently the intellectual, social, and economic development of large numbers of children is under any circumstances most lamentable, but to do so unnecessarily because our educational system is defective, seems truly deplorable. From 70 to 80 per cent. of the parents of Massachusetts consulted by the commission, testified to their willingness and ability to have extended the education of their children, had the type of education offered, promised to raise the

economic status of its pupils. We must therefore make a new appeal to the youthful mind as soon as the more general one of the present system is exhausted. Law, custom, status in life, wishes of parents and teachers, come in to reinforce native inclinations of the pupil for a broad and liberalizing education. But these sooner or later lose their force, and when they do the new appeal should supplant them. It will have a double force, economic for both pupil and parent, and psychical for the student. Education which unmistakably betters early economic status and opens the road to a better economic career for the future appeals almost irresistibly both to parent and child, while education which takes full cognizance of social stimuli is sure to awaken spontaneous and hearty response. Our success in reclaiming delinquents through schools that give scope to individuality and motor activities proves this. Pupils sometimes run away from the regular schools that they may join the delinquent class where they can find educational stimuli to which they can make a whole-souled and vigorous response—all of which leads to the reflection, that the only boy who can now find the type of education best fitted to his nature is the bad boy. In such an education the mind is stimulated by contact with the important things of everyday life, and mental arises from technical work. The exercise of the larger muscles, as in wood and metal work, gymnastics, industrial drawing, laboratory work in physics and chemistry, precedes and gives rise to those forms of mental response which always result from contact with real situations. In similar manner, a wider knowledge of geography naturally arises from study of the raw materials of commerce, and a more vital attention to literature and history through the reading and acting of literary masterpieces as a relief from the more strenuous duties of the day.

In addition to the technical high schools now here and there provided, which are confessedly only slightly altered schools of general training, we need a parallel system of schools much more distinctly industrial. But perhaps most of all we need a system of such schools that will open their doors to that large contingent

which leave school forever even before the grammar-school course is finished. These might well be called

JUNIOR INDUSTRIAL HIGH SCHOOLS

The word *junior* signifies that these schools shall be open to all who have fairly mastered the elementary school arts, say at the completion of the sixth grade, or at the age of twelve for normal pupils, or thirteen or fourteen for those who for one reason or another have been retarded in their school work. The course of study should cover four years, thus graduating the normal student at the age of sixteen.

The first two years would be given up to those studies and exercises which above all others lay the foundation for success in industrial occupations. First and foremost should come industrial drawing both freehand and mechanical. There should be in it not a trace of that barren aestheticism which so often blights this exercise in general schools, but every step should be toward constructive originality in design, or those forms of mechanical constructive skill which gradually develop into architectural, mechanical, and topographical drawing of the highest type, as seen in such institutions as the Brooklyn Manual Training High School.

The second great group of studies in the junior industrial high schools should be those varied fundamental activities known collectively as manual training. By this term is not meant those recreational exercises now held for one or two hours a week to cheer the brain-fagged youth of the general courses, but a solid business occupying from a third to a half of the whole school time. Such training grows naturally out of the constructive drawing, and includes many forms of wood, metal, cloth, and paper work for boys, and dressmaking, millinery, and the elements of domestic science for girls.

Closely associated with these two lines of work, commercial geography and elementary laboratory science will be taught in closest connection with the raw materials of commerce as furnished by the exhibits of the Philadelphia museums. Physics will grow out of the study of mechanical inventions such as are used in transportation, manufacture, and the trades, and those

most common in everyday life, as seen in the household and in the street. Nature-study as an end in itself has no place in such a school, for it does not furnish the right motives, but through a study of its applications science is to be learned. In other words, science is never to be pure, but always applied.

The time for fairy tales and pure literature as an aesthetic end, whether prose or verse, has gone by when these schools are reached, so that literary culture, if it comes at all, will come as a by-product. When cereals are studied, however, we may well follow the example of the German continuation schools and furnish the pupils with a monograph which will in suitable literary form give an account of the raising, grinding, and preparation of grains for food, as above described.

Commercial arithmetic and concrete geometry will be taught during these first two years, to be succeeded by algebra and demonstrational geometry in the last two. No argument is needed to show the practical value of these subjects, whether for immediate success in industrial pursuits or for later promotion to higher educational institutions. Along with the subjects above mentioned, a commercial study of modern foreign languages should be open to every pupil, but not made compulsory. If all we want of a foreign language is the ability to read it we may begin it at any time; but if we expect to use the language as a tool of intercommunication then the American high school begins its study too late. Foreign schools habitually begin such studies at or before the age of twelve. We must do the same if we hope to achieve equivalent results. To have an opportunity of learning German, French, or Spanish by a practical method at this early age will be a boon for all who are later to go into commercial courses, and also for those who will later be promoted to higher technical schools.

Such in briefest outline are the basal studies for the first two years of the Junior Industrial High School. During the next two years, the curriculum of studies and exercises will differentiate in several directions, according to the special needs of the pupils and the demands of the locality in which the school is situated.

THE TEACHING OF AGRICULTURE IN THE HIGH SCHOOL

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In a great many ways the teaching of the biological sciences in the high school is unsatisfactory. In many schools the number of students electing such work is falling off; the interest in the work is not vital and sustained, which would indicate that the work is not related to the life of the students; the practical value of the material presented is not always evident. This paper plans to discuss the general point of view of biological teaching in the high school in the endeavor to discover some of the causes for the unsatisfactory condition and to offer a tentative remedy for the problems which seem unsolvable with present methods. This remedy advocates the teaching of applied science to the adolescent in place of the theoretical science now taught, in the belief that such material is better adapted both theoretically and practically to the needs of the secondary student.

The secondary field is relatively the least organized of the great fields of education, grade school, high school, and college. It would seem that the high school has accepted subjects for the course of study without adapting them to the needs of her students or to the purposes of her work. She has had two great sources for her subjects, the college above, which has given her a body of material in method too remote from her pupils; and popular demands, which have given her a body of material such as commercial geography and history of commerce, which is relatively unorganized. I take it, the pressing work in the high-school curriculum at present is not one of getting new material, but rather of securing a secondary viewpoint for the material that we have in the course of study. We must modify the present subject-matter so as to relate it to the intellectual

needs of the adolescent and to the practical demands of his life. When we have assimilated what we have we can take on more.

In particular it is believed that biology is such a field of study taken from the college and failing to accomplish all that it might through the maintenance of the college viewpoint. The college method fails to meet the needs of the boy or girl of fourteen or fifteen, first because it is a pure science, and to it practical aims are only incidental; that is, the worker in the field is only casually interested in what use can be made of his work in everyday life. Yet the adolescent is intensely interested in just this sort of thing. Further, the pure science viewpoint is a theory of the field of life, and its problems lie in extending the boundaries of knowledge, and elaborating the theories held in regard to the field. Here is a purely intellectual and remote interest which it is hard for the boy or girl to get. Again biology, as now taught, takes up the laws of the whole field, and what seem to the pupil unimportant characters and remote forms, such as ferns or mosses, are given as much time as those having larger and more human values. When we are teaching how a form has acquired its characters, the student is often asking, of what use is it to know this? Or if we consider the problems of biology, how the individual adapts itself to its environment, gets its food, and reproduces its kind, we have purely intellectual values in a theory of life unrelated to practical needs. In a word, our colleges of pure science have been at work upon the theory of evolution. In putting science in the high school we have taken this point of view without question, assuming that it is the only one to be used for purpose of education. As college men in a large measure have written our texts, and as our teachers have come from schools of pure science, rather than technical colleges, this has been inevitable. But conditions in the high school make it necessary that we reconsider our methods in the endeavor to get a plan suited to the needs of the high school.

Further classroom observation confirms this theoretical indictment of the work in biology in the high school. The number of students electing botany, particularly, has fallen off greatly, and the interest in the classroom has not been very great or con-

tagious. Of course, some may urge that this condition is due to the teacher, but this condition has existed with a number of teachers, and the result has always been that the nearer university methods were approximated, the less the students took to the work. Lastly, inquiries among teachers of biology in other schools has confirmed this general position, that the teaching of zoölogy and botany is quite unsatisfactory at present. In this connection might be considered the census reports which show a falling off in the number of students taking science. While this may be open to other interpretations, it at least shows something unsatisfactory in our present methods of teaching science.

Now I believe the method of approach and the character of the problems presented is largely responsible for the lack of interest in biological science among high-school students. As the adolescent is introduced to the problems of science for the first time, this theory of evolution is the science he gets; a philosophical statement of the living world. He is interested in the world about him and the problems that men are at work upon, but he is given a theory of life forms and processes, of which he can make no practical application. Should not rather the first science work make him acquainted with some of the practical problems of his environment? Not questions of coloration, or homologous parts, or how the organism has acquired its characters, although these are all right in due time, but rather problems of everyday life that men are struggling with in the gaining of a livelihood and, hence, that are replete with human interest and practical usefulness. Also it is to be remembered that genetically the practical organization of the environment comes first and the philosophical later. Men meet first the necessary problems of their life, the problems upon which health and trade and government depend, and then later attempt to organize the apparently disconnected facts; that is, they accumulate a body of facts in the pursuit of practical problems, then later they attempt to organize and explain them. So, it seems, should be the approach of the youth to the field of science; he should gain a body of facts in the study of problems that he sees have a bearing on the life of man, and then, later, as a means of binding

the facts together, he should have presented the theories in regard to them. Thus our high-school science must change from topics having merely an intellectual interest to problems having a practical bearing. Education is to give, not a fund of knowledge, but an ability to act.

The question, then, is how can we organize our science work to meet the general conditions outlined? As the above indicates, the college can hardly help us in the problem. It must be worked out by the secondary teacher from the facts as he finds them in his work. It might at first seem that the subject-matter of our present courses could be converted into a form more suited to the needs of students in the first years of high school. There have been some attempts to do this in the recent texts, which, for instance, begin the study of zoölogy with insects and emphasize the striking points in life histories and adaptations; and which treat botany from the old point of view, yet dilute the material, so to speak, with as much of "practical" matter as possible. Such texts have not been tried long enough really to test their value in use, yet it seems to me that the solution is neither hot nor cold and will be spewed out as namby-pamby sort of nature-study, built upon specious problems and interests, and so lacking the elements of a vital and invigorating study. And if the analysis given above is correct, such attempts are bound to be displaced by a plan appealing to the student as vital and to the community as having practical value. For we are in the midst of a great demand for a secondary education that shall be practical, and we must harken a little to the earnestness of the appeal.

I believe that our real inspiration and permanent method in high-school science is to come from what might be called the technical and industrial movement of today. We must relate our science to problems of everyday life, in the home, the community, manufacturing, trade, and transportation, etc.; and, in the first years of high school, at least, relegate to a secondary position the theoretical basis upon which science rests, except in so far as these have practical application. For instance, in the case of the biological sciences we must break away from the theories of evolution, and, instead, teach biology as it relates to

man in some of his fundamental needs. It must become an applied science. As it seems to me this would mean the teaching of agriculture, or man's relation to his food supply. This does not mean the teaching of technical agriculture, but, as the succeeding will attempt to show, agriculture as the core around which may be grouped in a vital way the fundamental conceptions of elementary science. Agriculture is used as a means of education, to explain the environment and to develop the student, and not as a means of giving technical skill. Thus what is proposed is not a new subject for the curriculum, but a new method for work we are already doing. This is the work we have been doing at DeKalb this year in some of our elementary science work. And from our results we believe that we are on the right track, though of course our work is in the tentative stage. However this may be, our results will have value as indicating the field in a general way, and the possibilities to be obtained from developing it.

Before taking up the work at DeKalb it will be well to have in mind, for purposes of comparison, some of the other proposals to teach agriculture in the high school. As an example of these let us examine briefly the pamphlet recently sent out by the Department of Agriculture entitled, *Secondary Instruction in Agriculture*. In general we may characterize it as a plan to have the high school make trained farmers. It is a plan to put specialization into the high school before the student is prepared to specialize, and, in so far, as contrary to the theory and practice in other lines of education, which puts later, rather than earlier, the time of specialization. For example, on p. 2 we find: "The course of study outlined is based on the assumption that this subject will be preceded by botany, physiology and, if possible, chemistry, and that the textbooks used and the class of subjects discussed under each science will be those most important to a clear understanding of agronomical teaching." And again on p. 7: "No work in high-school agriculture should be attempted unless the school teaches botany." And the report as a whole takes this point of view. It is evident that this plan does not help us to solve the problems of elementary science. If the above

recommendations were followed, we should still have our usual courses in botany and chemistry for which the student sees no direct use; we should still have the adult's idea of "preparation for life," but with no immediate motive for the boy or girl to get this preparation. Further, we have the attempt to make of the high school a technical school. If the plan were to put in agriculture without all this preliminary training, it might be justified on the basis that it would be a start toward making the high school industrial. But to require a large amount of theory before the industrial work is begun is to fail to reach those wishing industrial work. The students who are anxious to get industrial training are not, as a rule, willing to take any large amount of preliminary theoretical work before beginning the practical work. For instance, it has been our experience that country boys balk at pure botany as much as city boys do. Lastly, it might be asked, why cannot this knowledge, required as a basis for agriculture, be gained in connection with a study of the practical problems of agriculture itself? Possibly the work would go a little slower at first, but would not the knowledge be more vital, more interesting, and be retained longer, than if got in a theoretical way a year in advance?

This last question indicates the plan upon which we are working at DeKalb. We believe that the first science should be approached from the side of practical problems that men are at work upon in everyday life, rather than from that of a theory which explains how life forms originated, and how they are connected. We believe that by so doing we shall get an added interest in the work because the adolescent, with a growing social consciousness, is naturally interested in the ways men are getting a living. We believe that we shall give a greater practical value to the work because we give the student an attitude which enables him to act rather than a description which enables him merely to understand. We believe we shall get greater educational value, because we combine interest and action in our educational process. We believe, further, that we shall get greater social value because we treat one of the fundamental activities of man in a scientific manner. Thus we hope to solve by this means some of the press-

ing problems of the classroom; to answer the criticisms of those who demand a more practical curriculum, and yet not to sacrifice anything on the side of educational value. Does it not seem that it is better to study the food plants in relation to food supply, their structure and care with a view to their improvement, rather than to discuss plants with reference to the theory of relationship, or to the facts of growth and reproduction merely as a description, with no practical end in view? Some high-school texts devote fifty or more pages to a discussion of insects simply as evolutionary forms. Surely we can get a more invigorating and practical attitude for study by considering insects in relation to food plants; how to fight them or to use them in the problems of insect enemies of staple crops. Their life history then has a meaning which a mere theoretical discussion can never give. The questions of the composition of food plants, of soil composition, and fertilization introduce the student to botany and chemistry in a very vital way, and at the same time the subjects are given a human and practical touch as the student sees through them the great international problems of food production. In like manner the questions of soil formation, rainfall, and climate bring in the elements of physiography in relation to real problems. And the close connection of all these subjects, with business on one side and with home on the other, gives many centers for interest and avenues for practical use of the knowledge gained. Of course these are but a few of the problems. Will not topics so related appeal, because of their human interest, to all students of the period of expanding social consciousness? And will they not help to hold some of the practical type for whom we provide very little at present? Further, will not the average man see much to approve in a subject with so practical a bearing? He wants studies for his children that touch life closely. So often I am asked by parents what practical value will accrue to children not going to college, from a study of biology. And I confess that to some I have hard work making the words "knowledge of life," "culture," "discipline" seem very real. And it hardly seems to me that we can say that the high school is not for such as these.

Some may ask where would the present science courses come in, or would they be taught at all in high school? It should be evident from what has been said that the work in applied science is not urged because of a total lack of faith in the pure science point of view. Its place in high school, I take it, would be at the close of the course in applied science, when summaries and illustrations of the theoretical point of view would be given. Naturally, also, in advanced work the theoretical viewpoint would be taken. But this would be specialization for students whose interests were in those lines, not the only point of view for all students. For students taking only the beginning work it is believed that the advocated course is the most valuable in the process of teaching and leaves the most beneficial results. In like manner the technical work proposed by the Department of Agriculture would be provided for in the advanced courses in the schools which found that they had students wishing to specialize in agriculture. That is, both the theoretical and the technical are later viewpoints to be taken by students whose interests lie in those directions.

It follows from what has been said that the study of agriculture is suitable, not alone for country high schools, but also for the city high school. The pedagogical and practical reasons obtain in the city as well as in the country, and it is believed that the social value obtains also. Industrial biology has for any student the desirable social end of explaining to him the scientific laws and industrial methods in one of the fundamental processes upon which social life depends, the getting of a food supply. It is true that for the city boy these processes have been removed from his direct view, but this very removal lends force to the argument that they must in some way be restored to his view if he is to understand his life and so be truly educated. Real purposes of culture are served when we show him how certain apparently disconnected facts of his life are parts of a great social process. Since the unorganized part of his environment does not show these things to him, the school must endeavor to do so. We justify the introduction of manual training into the curriculum for one reason, because changed social conditions

make it necessary for the school to undertake this work, in order that the child may have some opportunity to learn processes which were got in former times in the home. For similar reasons the city high school must acquaint its students with the processes upon which the very life of the community depends. It would seem that the study of agriculture offers this opportunity in a very attractive form; and when it is so used, it serves educational purposes in the highest way.

And what as to equipment? As some have urged, is a farm necessary to teach agriculture? So far as our experience shows, a school does not need a farm in order to teach agriculture well. Any school that is equipped to teach zoölogy and botany from the laboratory method can teach agriculture, and teach it satisfactorily. One needs, of course, plenty of room to grow plants in pot and box cultures. By means of these and the use of the ordinary laboratory methods the conditions of experiment can be set and controlled, and the fundamental scientific laws underlying agriculture can be developed and illustrated. Our work seems to lose none of its vitality through this method. A garden, of course, can be used to advantage, and is to be carried on, if possible. But it is the advanced and technical side of agriculture that is to be developed through a farm, and only those students wishing to take advanced work would need the farm work. The demand for the technical work would arise most frequently in an agricultural community where the means for farm work would be at hand.

There is at this time an insistent demand for the establishment of high schools in which agriculture shall be the dominating study. The results of this demand are seen in the plan of the federal government to aid such schools with federal funds. It is high time for the present high school to show itself able to meet this demand, or else it will undoubtedly see established beside it a series of separate schools devoted to the idea of agricultural education. As has been pointed out by Dean Davenport, of the University of Illinois, the establishment of such schools would be a serious evil, involving as it does the division of forces and funds between two schools which would do practically the

same work with the exception of the agriculture. It would further lead to the creation of serious class distinctions and rivalries; and the agricultural high school, through too early specialization, would undoubtedly give its students a narrow and limited outlook on education and life. It has been the purpose of this paper to show that the present high schools can take up this work in agriculture in the elementary work as a means of education, and, later, can develop in its true place a technical agricultural course for such students as wish to elect advanced work. And further, by reason of the wider range of studies offered, the present high school can give to all its students the education which shall make them better citizens, better members of a family, better appreciators of culture, while not neglecting in the least the education that will make them better bread-winners.

In conclusion I need only recall to your attention that the waning interest in the classroom; the failure of the descriptive method; the social and practical needs of the secondary student; the demands of the community for a more useful education; the plans to establish agricultural high schools, all indicate a need for a revision in our methods of teaching biology. Are we going to remain indifferent to these indications, or are we going to try what seems the most likely remedy: applied science in agriculture?

A general outline of our work is given herewith. This bare list of names gives little idea of the vitality of the work. It may, however, help to indicate more accurately the field. This year we began our work with the topic "soil," because we found the texts arranged with this topic first. We believe the better way is as outlined below, first, because the plant material is available in the fall; and also because it seems the more natural point of attack for the student. The work on soils can be done in the winter term to good advantage.

1. The Problem of a Food Supply.
   The staple cereals: general characteristics.
   Where produced. Value as food.
   The amount of wheat consumed.

Surplus producing nations.
Famines. Law of Malthus.
Animal foods.
Meat supply. Meat as food.
Balanced ration.
References.—Crookes, *The Wheat Problem;* Craigie, *Meat Supplies of This Country.*

2. The Propagation of Plants—with reference to the cereals. Experiments with seeds and seedlings, showing vitality, germination, relation to moisture, heat, etc. Cf. Osterhout, *Experiments with Plants.*

3. The Cereals. Since we are located in the "corn belt," we began with maize.
Maize—a more thorough discussion of its value: uses, where grown, etc. The plant—general structure and function. The grain—structure and composition, with reference to uses as food, in industry, etc. Value of high protein, etc.
Improvement—ideals for perfect ear and plant; variation; cross-pollination; corn breeding; work of experiment stations; results to be gained by selected stock.
Culture—the best soil-fertilizers; methods of tillage; the use of machinery; harvesting.
Diseases—fungous—their treatment.
Enemies—cut worms; an excursion into biology of some length here. Weeds as enemies.
Wheat—treated under topics similar to the above. Wheat offers richer social material than maize.
Rice and rye—treated briefly as the staple foods of other countries.
References.—Hunt, *Cereals in America.*

4. The Soil. The soil as related to plants. Functions of soil. Plant constituents obtained from the soil; from the air. Renewal of soil; rotation of crops; fertilizers; the work of legumes. Social effects of waste of soil.
Formation of soils—work of atmosphere; water; living forms; a considerable excursion into physiography can be made here.
Classification—soil and subsoil; clayey, sandy, limy, humous.
Soil activities—capillarity; diffusion: solution; osmosis.
Soil temperature.
Drainage.
References.—Fletcher, *Soils.*

5. Milk and Its Care. Food values—analysis; Babcock test; souring; bacteria.
The Dairy Cow. The type; feeding; the balanced ration; breeds of dairy cattle.
Beef Cattle. The type-breeds; meat foods; cuts of meat.
Poultry; sheep; swine; horses; reports by students.

6. The Forage Crops—briefly.
   Timothy.
   Red Top.
   The Legumes.

(The following topics have not been worked out in the classroom, so they are only indicated).

7. The Vegetables—briefly.
   The potato.
8. Fruits.
   Value in commerce and for food.
   Propagation by budding and grafting. This is the spring work.
   Insects as an economic factor—how to combat them.
   Birds as an economic factor.
9. Forestry. Its principles.

References.—The following books have been found most useful: Jackson and Daugherty, *Agriculture;* Massey, *Practical Farming;* Bailey, *Principles of Agriculture;* Hunt, *Cereals in America, Forage and Fibre Crops;* King, *The Soil;* Wing, *Milk and Its Products;* Bailey, *Principles of Fruit Growing;* Sanderson, *Insects Injurious to Staple Crops.*

SYNTAX IN CAESAR

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I. CASE CONSTRUCTIONS

The modern ideal in the study and teaching of ancient languages is scientific simplicity. It was a desire for simplicity that began over a generation ago to produce our now universally used first books, annotated texts, and selected vocabularies, supplanting the bare texts and unabridged lexicons with which our grandfathers began their study of the classics. Simplicity, concentration, definiteness, the elimination of non-essentials are the themes of numerous articles in the professional journals. Many books even are being issued, dealing with different phases of the subject, such as vocabulary or syntax, but all pointing in the same direction. The authors of the hundred and one *First Latin Books* now on the market agree in their desire to secure simplicity, even if they fail to agree in any other respect.

But all attempts at simplification, to be effective and not result in mere superficiality, must be based on scientific principles. Textbook makers and classroom teachers must see to it that their short-cuts square with the facts and must not be carried away with a laudable desire to "make the rough places plain." Genuine scholarship and the scientific point of view are needed, and needed in beginners' work as well as in university courses. In this scientific age a rational statement of the facts of a language in our textbooks and a scientific attitude on the part of our teachers will aid greatly in keeping the classics in favor alongside of the laboratory sciences. And a true scientific attitude will not only secure a greater respect for our work, but is the only means by which the much-to-be-desired simplification can be successfully effected. True scholarship and effective pedagogical method do not conflict. The results of historical and comparative study in philology have already greatly aided in

the simplification of language study. For example, the recognition of Sanskrit as a sister language of Greek and Latin in the great Indo-European family has practically solved the complicated problem of the Latin ablative, by showing its threefold nature. The classification of ablative construction as separative, sociative, and locative is implicit in all modern grammars and should be more widely employed in all elementary work.

The writer remembers that it was not until he was well along in his college course that he discovered any real system in the widely varying uses of the ablative. Such an illumination might just as well have come at the beginning of the work, if the subject had been properly presented. I shall try to show, a little later on, one of the methods which I have found helpful in impressing this fact on students in the first and second year's work. By treatment similar to that employed for the Latin ablative, the uses of the Greek and Latin moods have been made much clearer through a recognition of the fact that Greek, Latin, German, and English are at bottom very much alike in their modal machinery. An increased appreciation for the much-neglected English subjunctive is one very gratifying result. And I take it that the study of any foreign language by the great majority of English-speaking pupils must find its chief, or at any rate most evident and immediate justification in the beneficial results to be obtained with reference to the pupil's English. This is not to deny that many other advantages are to be gained. Certain it is that a knowledge of other civilizations, of the public and private life of other peoples, a first-hand appreciation of their literatures, are all eminently worth while in language study, but I do insist that such matters, in the earlier work at any rate, and for the great majority of our pupils, are merely incidental and are to be obtained in much more economical ways, and that a conscious study of language for language's sake should be the chief aim; and this is only another way of saying that the reflex influence on their own mother tongue is the test by which the value of foreign language study must be measured for the great majority of our students. Reason and experience have shown that the ancient languages, especially

Latin, are pre-eminently suited to this purpose, and the classics, whenever placed on trial for their lives, can always be successfully defended on the basis of their benefits to English in matters of etymology, grammar, and rhetoric. Of course back of adequate words, phrases and sentences there must always be logical, clean-cut thinking, and language has this advantage over the mathematical and physical sciences that its material is the end as well as the means of study. No nobler, no more fruitful field of study can be imagined than that of human thought as expressed in human speech, and the translation or analysis of a sentence, even the parsing of a noun, is nothing less than that.

In this discussion, therefore, I shall deal only with some of the purely linguistic problems, more particularly syntax, though I am not unmindful of the excellent results of historical, archeological, and antiquarian studies, by which work in the classics has been so greatly enriched. More particularly still, I shall consider the problem of case constructions in Caesar, the first real foreign language reading undertaken by the vast majority of our pupils. The taking-up of Caesar is the young scientist's first "field trip" and his first opportunity to test the knowledge he has gained in the first year's work. And it is just here that the most skilful guidance is needed to save him, on the one hand, from the notion that language is a purely mechanical and artificial sort of thing, to be worked out by the puzzle method, or, on the other hand, from the equally fatal idea that language is absolutely lawless and he had best consider the whole affair a guessing contest, first and last. The question is, "How much syntax shall be taught to pupils in Caesar?" My answer is, "Teach all there is there, *but no more.*" Whatever else will result from a detailed study of a given author, such as I am here suggesting, the pupil will be shown what constructions to learn, and the teacher will be shown what *not* to teach. At this point in his work the pupil knows, or should know, a case form when he sees it. He knows, or should know, that a nominative case is used either as a subject or predicate. Can he be helped to an equally sure knowledge of the only slightly more difficult uses of

Case Constructions in Caesar, B. G. III.

277 NOMINATIVES in Caesar III express:

(1) Subject
- (a) of Finite Verb[1] 269x
- (b) of Historical Infinitive[4] 2x

271x

(2) Predicate[1] 6x

In chap. 1—18 constructions
2—3 first
3—3 appear
4—2
5—3
6—2
8—1
9—1
10—1
11—1
13—1
15—1
19—1
22—2
23—1

In chapters 1 to 23—41 constructions.

219 GENITIVES in Caesar III express:

(1) The Whole[1] (Partitive Gen.) 19x

(2) Possession, etc.[1] (Includ. Subj. Gen.) 153x

(3) Composition or Material[2] 22x

(4) Description
- (a) Quality[3] 8x
- (b) Measure[12] 2x

10x

(5) "Object"[5] (Objective Gen.) 15x

71 DATIVES in Caesar III express:

(1) Indirect Object[1] 20x

(2) Various Relations with Compound Verbs:
- *adiungo*[2] 1x
- *occurro*[6] 1x
- *adscisco*[9] 1x
- *praeficio*[11] 2x
- *adaequo*[12] 1x
- *praesum*[14] 2x
- *insero, adfigo*[14] 1x
- *accido*[22] 1x

10x

(3) Various Relations with Certain Verbs:
- *persuadeo*[2] 2x
- *placeo*[3] 1x
- *studeo*[10] 2x
- *noceo*[13] 2x
- *confido*[25] 1x

8x

(4) Purpose[3] 5x

(5) Reference[6] 18x

(6) Agency with Fut. Pass. Part.[10] 5x

(7) Various Relations with Adjectives:
- *proximus*[11] 2x
- *adversus*[14] 1x
- *finitimus*[20] 2x

5x

434 ACCUSATIVES in Caesar III express:

(1) Direction { *in*[1] 53x; *ad*[1] 51x } (Inc. Place Whither) 104x

(2) Direct Object[1] 225x

(3) Subj. of Infinitive[1] 57x

(4) Space Relations with
- *per*[1] 8x
- *propter*[2] 15x
- *praeter*[3] 1x
- *intra*[6] 1x
- *proximus*[7] 1x
- *inter*[8] 2x
- *ad* (at, etc.)[9] 2x
- *apud*[9] 2x
- *contra*[9] 3x
- *post*[10] 1x
- *ob*[23] 1x

37x

(5) Degree[3] 7x

(6) Duration of Time[5] 1x

(7) Extent of Space[19] 2x

(8) Predicate[22] 1x

127 FROM-ABLATIVES in Caesar III express:

(1) Separation Place Whence etc. { *ab*[1] 15x; *ex*[2] 37x; —[4] 9x } 61x

(a) Developed from Separ. { *de*[1] 6x; *pro*[9] 7x; *sine*[21] 3x } 16x

(2) Agency, *ab*[1] 19x

(3)*Cause { —[1]; *de*[2] } 19x

8x

21x

(4) Comparison[5] 1x

(5) Material, *ex*[13] 2x

(6) Point of View, *ab*[22] 3x

(7) Accordance, —[23] 1x

229 WITH-ABLATIVES in Caesar III express:

(1) Accompaniment { *cum*[1] 18x; —[11] 1x } 19x

(2) Route[1] 6x

(3) Attendant Circumstance { *cum*[1] 4x; —[4] 4x } 8x

(4) Ablative Absolute[1] 129x

(5) Means[1] 44x

(6)*Description[4] 4x

(7) "Object" of
- *utor*[8] 2x
- *fruor*[22] 1x
- *potior*[24] 1x

4x

(8) Degree of Difference[9] 10x

(9)*Manner, —[15] 5x

92 IN-ABLATIVES in Caesar III express:

(1) Place Where { *in*[1] 50x; —[2] 8x; *sub*[16] 3x } 61x

(2)*Specification[4] 12x

(3) Time When[6] or Within Which[12] 7x

19x

NOTE—The constructions in each column are given in the order in which they first occur in Book III. The superior figures at the right indicate the chapter. A dash indicates the absence of a preposition. The total number of constructions is 41. The total number of substantives, including appositives, is 1449.

*Constructions of composite origin, repeated from above, where they are grouped for convenience:

Cause[1] (*from* or *with* or *in*), often indistinguishable from Means.
Specification[4] (*in* or *from* or *with*).
Description[4] (*with* or *from* or *in*).
Manner[15] (*with* or *from* or *in*).

the other cases? The chief danger is that he will become confused and needlessly alarmed. I have had pupils and teachers, too, for that matter, estimate the number of different case constructions which they rather expected to find in a given book of Caesar as high as 150. It is just here that an out-and-out laboratory method, namely, an observation of the facts presented in the text being read, a classification of those facts, and deductions therefrom, is a plan which has been found most effective with pupils who have already gained the elements of a language. The exhibition and preservation of these classifications in chart form has served to make the work more definite and concrete. Such a treatment of case constructions as is herewith presented (see table) furnishes the pupil with all the grammar necessary for case constructions in the passage under consideration, and furthermore, what has been found sufficient for any such passage, with only minor changes, will be found sufficient for all of the pupil's work in the language. With the forest thus cleared of imaginary foes of unknown case constructions, the pupil can go calmly about his work, surrounded for the most part by such old friends as nominative subjects and accusative objects. It is the regular, easy case-uses that the pupil must be taught to know and believe in. But if the pupil has been forced to learn, as is too often the case, that he is likely to be asked for only the "freak," or, at best, the rarer, constructions, he is not entirely to blame when he tries to cover as much territory as possible by some such answer as "accusative of possession in the ablative absolute of time."

The accompanying table of case constructions is an attempt to reproduce in type a wall or blackboard chart such as I invariably have the pupils help me make up for at least one book of Caesar. There are several points of which I wish to speak. To begin with, this scheme with its seven columns is the graphic form in which I seek to have the pupils think of the case uses. I have chosen to present the facts for book iii, in this discussion, among other reasons, because none of the rarer constructions occur in this book, and because the order in which the constructions in each column happen to appear, is almost ideal. The

totals are not essential and are added here only as items of interest. The use of the formula, for example, "Genitives in Caesar iii express the Whole, Possession, etc.," seems to me less confusing to the pupil than to speak of a genitive as Partitive or Possessive. In fact, I try to get the pupil to take up every substantive in the first two or three chapters and then to tell as nearly as he can just what idea or relation the case form actually does express. When he has told that, he has *named the construction*. Opinions often differ, and the traditional categories are not always forthcoming. So much the worse for the categories! However influenced by the technical terms met with in the first year's work and by the notes and grammar references in the textbook, the pupils come to sufficient agreement to start the chart, which then grows under our hands as we proceed, new categories being added as they seem to be needed. The chart herewith presented is a finished product of classroom work, with the exception of the totals, which are my own addition. These totals are the result of somewhat arbitrary classification in many instances. In class work the pupils are shown that if a construction is only placed in the proper column that is often the best that can be done. It is easy thus to show how one construction merges into another, and how one construction grows out of another. Here, too, is illustrated the fact that the categories we employ are not always due to fundamental classifications in the one language but may have their practical value only because of a difference of idiom in the two languages. Examples of this sort are Ablatives expressing Agency, or Point of View, both clearly separative to the Roman consciousness, as is shown by the regular use of the separative prepositions, but our English idiom requires "by" for Agency and "at" or "on" for Point of View; hence the practical value of separate categories for these constructions. Another case in point is the Objective Genitive here given as a separate construction, because in English this idea is so frequently expressed by the use of the prepositions "for," "to," "toward" (direction words), "love for one's country," for example. On the other hand, the Subjective Genitive is regularly translated, as is the Genitive of Possession, by the prepo-

sitional phrase with "of," or the English possessive case, and thus requires no special mention. Again, Ablatives expressing Accompaniment, Means, Description, Manner, Attendant Circumstance, and even the Ablative Absolute may nearly always be translated by the use of the English preposition "with." I know no better way to impress the essential unity of the several constructions within such a group than by "ringing the changes" up and down the column, using English examples, such as the following (see the next to the last column of table):

He came with a friend. (Accompaniment).
He came walking with a cane (Means).
He came with great speed. (Manner).
He is a man with great influence. (Description).

Further, such examples as: "He came with my consent," or "with his books strapped toether," or even "*with* his books lost," (really *without* his books, and equal to "his books having been lost") show the easy transition from the slightly associative construction of Attendant Circumstance to the Ablative "Absolute" construction which, after all, really never *expresses* any idea but that of attendant circumstance. The other two constructions in this column, Route or Way by Which, and Degree of Difference are easily seen to be developed from Means and might well be given as (*a*) and (*b*) under that head. However, the effort in making up this scheme is to avoid too great complication, and a word of explanation in passing is all that is needed to justify the present grouping. Similarly, in the Accusative column, Degree (how much), Duration of Time (how long), and Extent of Space (how far), in reality the same thing, are here given as separate constructions, although usually no distinction in terms is made, or need be made, when language passes from the original and fundamental concrete relations involving space-ideas only, to those of time or pure abstraction. Language is primarily spatial, concrete, and the pupil should be made to realize this fact, though, as has been suggested, we use both in Latin and in English the same case-machinery and apply the same terminology in saying, for example, "They fought *from* the seventh hour *to* (till) evening" (Time), or "They fled *from*

danger *to* safety" (Abstract) as in expressing the more easily pictured idea, "They fled *from* the river *to* the forest (Space)." The setting-up of a new category for every "figurative" or "extended" use of a case would be as useless as it would be difficult. To take a single example: Cause, essentially an abstract idea, may be expressed in Latin, and very commonly is expressed by the use of the space-relation; Accusative with *propter* (along-of, *by*-cause-of, on-account-of), or with *ob* (up-against). Cause may also be expressed by the use of the *from*-Ablative, with or without a preposition, as in English we say, "He died *from* (or *of*) a wound." Source *from* which is of course the idea here. But we can also say in English, "He died *with* a wound" (Sociative) or "I rejoice *in* your success (Locative), and we know from the occasional use of *cum* and *in* that the Romans had equivalent methods of expressing Cause. Shall we therefore set up four categories? No, the thing to do, as it seems to me, is to allow the Accusative uses to take care of themselves, and in regard to the others say that the "Ablative is used to express Cause," which may in a given case be either *from* or *with* or *in*, so to be translated, or by any other of the causal prepositions or phrases. This method of disposing of a given Ablative I consider much better and really simpler than to evade the whole point by saying it is "just Ablative." In the chart Cause is placed first in the *from* column because of the rather frequent use of a *from*-preposition, and an asterisk calls attention to the grouping below where its composite origin is shown. Here, too, are placed, for similar reasons, Specification, Description, and Manner. That is, one may describe by saying "He is a man *of* good family" (Latin Genitive) or "*from* a good family, *with* great influence, *in* good circumstances" (Latin *from-*, *with-*, and *in-* Ablatives respectively).

Without going farther into details, let me call attention to some of the suggestive facts shown in the chart. There are 1,449 substantives in the 29 chapters of the book. There are 41 different constructions as here classified. This number could really be reduced as shown above. All these 41 constructions appear in the first 23 chapters, and 18 of them in the first chap-

ter alone. (See the first column of the table.) These 18 are, of course, the more common constructions and, as a matter of fact, are the ones to which 1,279 of the 1,449 substantives (or 88 per cent.) are to be referred. These oft-repeated constructions, the pupil can easily see, are eminently worth his acquaintance, and on the other hand the rarer constructions can be easily impressed as they appear because of their very rareness.

The reassuring thing about such a plan is that, with only slight changes in detail, it will work equally well for any book in Caesar or, for that matter, for any other Latin reading. Passages of equal length in Cicero have even fewer constructions. I have even used this same chart with Greek classes, the *from*-Ablatives, of course, becoming Genitives, and *with*- and *in*-Ablatives, Datives. In the remaining three books of Caesar only eleven other constructions are to be found; making a total of fifty-two for the four books usually read.[1]

Other items shown in the chart will I hope prove suggestive. Further discussion is impossible within the limits of the present article. A plan similar to the one here presented has been employed in dealing with the uses of the subjunctive. It is the purpose of the writer to discuss this subject at a later time.

[1] These constructions are: (1) The Genitive with *potior*, used once in Book i (chap. 3); (2) The Genitive with *reminiscor* and *obliviscor*, used once each in Book i (13, 14); (3) The Genitive of Indefinite Value, used once in Book i (chap 20) and once in Book iv (chap. 21), (this is, of course, only a variety of Description); (4) The Genitive with *interest*, used twice in Book ii (chap. 5); (5) The Dative of Possession, fairly common in the other books (e. g., i, 7); (6) The Accusative of Secondary Object, used occasionally in the other books (e. g., i, 12); (7) The Cognate Accusative, used once in Book iv (chap. 4); (8) The Ablative of Price (a variety of Means) used three times in Book i and once in Book iv (e. g., 18); (9) The Ablative with *opus est* (also a variety of Means), used once in Book i and once in Book ii (e. g., i, 42); (10) The true Locative (domi), used three times in Book i (e. g. ch. 18) and twice in Book iv (there is a possible sixth instance in Book i, chap 31, the text being in dispute); (11) The Vocative, used once in Book iv (chap. 25).

A STUDY IN ADULT EDUCATION

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From the theory of the prolongation of the period of infancy, and the teaching that education is life itself as well as preparation for more life, there has come a gradually increasing interest in adult education. An organization of the various efforts in this phase of development among the Hebrews, Greeks, and other peoples would be instructive at this time when school authorities are beginning to take account of the wider range of social needs. Some educational theorists have stated possible lines of working, but more attention has been given to the subject by the planners of Utopias than by other writers. In Europe the educational aspect of vocation has survived from the days of the *Wanderjahr,* and continuation schools, schools for the making of workmen's masterpieces, and university extension, have recognized the continued growth of the adult. In Oxford there is a workingmen's college—Ruskin Hall—to which delegates come from the various sections of England, sent in many cases at the expense of the trade unions to which they belong, in order that they may spend a year in study to fit themselves for usefulness in their unions and in local offices such as county school boards, etc. In America Dr. Leipziger's public-lecture system has been probably the most significant contribution to the movement. Dr. Adler has worked out a scheme which recognizes the necessity of growth in adult life as well as in earlier periods. The socialists are planning a summer "retreat;" the summer school is thriving despite the condemnations of its critics; various religious movements are utilizing instruction for older persons and a Chicago man secured public attention for a moment by advocating a combination of an old people's home and a college. It would seem that another stronghold of absolutism is yielding and that the day of the "grown-up" is passing.

A doctrine of further growth for the individual appeared some years ago in the *Atlantic* under the title "The Experimental Life" and this was made a chapter in *Education and the Larger Life* in which the author, Dr. C. Hanford Henderson, elaborated his original views of education. These in so far as they concern young people have been worked out in his summer camp, Marienfeld, in New Hampshire—one of the pioneers in this increasingly important form of educational institution. The opening this fall of his winter camp at Riverside, Cal., brings out a statement of educational aims unique in its simplicity and directness.

While the author's work has been largely with boys there is even in the book mentioned a programme of continued reconstruction and growth. In the story *John Percyfield* this idea is evidently in mind and still more clearly is it seen in the few chapters of autobiography which Doctor Henderson wrote for the *Teachers' Magazine* about three years ago. They also seemed to lie back of his treatment of the history of manual training in the *Popular Science Monthly*.

The *Lighted Lamp*, which Houghton, Mifflin & Co. have just bought out, is a number of things, but it may fairly be said to center in the possibilities of adult education. A coffee-and-spice clerk in Boston at the age of thirty-four is in ill health and receives a legacy of six thousand a year. His physician orders a trip abroad and in company with a poet and a lawyer he undertakes the journey. He is thrown in contact with two young women and one who is older, all of whom are instrumental in awakening him, for he is the lamp that is lighted. The details of this education are not so significant—the hero undertakes systematic work in physical education, in the French and Italian languages, and provides for a variation from routine which brings into use his imagination. In a sense it may be said that the book is an objective illustration of "The Experimental Life." In style there seem to be evident influences of realism—certain details are insisted upon and certain words and phrases become almost tiresome. Thus one wearies of the "New England conscience," the "natural history girl" "good breeding," etc. From one standpoint the work could be taken as a manual of etiquette.

But these and other limitations do not obscure the suggestion that one gets from this careful working out of the larger life of a middle-aged man. Probably the age chosen is significant, for there are apparent several suggestions of a belief in that "cosmic consciousness" which its advocates consider the sign of a higher stage with reference to adolescence as the latter is higher than childhood. There are also evidences of other influences from the occult studies occupying so much attention at the present time. There is no doubt that these oriental tendencies will in time add elements to our occidental ways of thinking and doing that are much needed, but this book does not help much in that direction. Pauline is evidently a "young soul" and Alicia and Mrs. Costello are "old souls." There is a curious and suggestive study in the reconciliation of pragmatism and Nirvana tendencies on p. 348. The discussion of the problem of the function of consciousness recalls at times President Stanley Hall's query in *Adolescence* as to whether consciousness may not prove to have been a sidetrack, "the wart raised by the sting of sin, a product of alienation, a remedial process."

The emphasis common in educational thought today, upon consciousness as a most significant stage in the round from impression through activity to the influencing of further stimuli, is bound up with the idea that education is in life itself as well as for the sake of the more life coming. It is interesting to observe by how many paths the direct, intuitional condition and more remote aim seek to re-enter the field. The author here could not justify his method on any other plane than the one he works upon. The young clerk awakens and reaches out for a larger life. His "reach exceeds his grasp" to a marvelous degree. He shows remarkable results in certain studies and is encouraged by one who we feel ought to know better to attempt architecture. There seems to be a very satisfactory, useful life open to him if he only has some wise co-operation in finding work that needs doing and is within his possibilities, but he is urged on to the impossible until there is no alternative for the author except to take refuge in the scheme that seems to the uninitiated to shift responsibility away from where it belongs. This resource is the

one which seemed necessary to Lessing in that most valuable of educational works, *The Education of the Human Race*—it is reincarnation! The hero must die and be born again with a body equal to his spiritual needs. One feels that the adult education is thrown aside and what could have been helpful for many people who need to see themselves and those they are concerned in objectified in a study by some one else, becomes a plea for other-worldliness, dualism, and a limited idealism.

There is, however, more suggestion of value than is at first apparent, and such works as Professor James's *Powers of Men* will aid the reader to sift this book and secure from it materials needed in our education without following the author to his transcendental conclusions.

NATURE IN THE *AENEID*

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The *Aeneid* is a composite of an extremely complex character. It is an allegory, symbolizing universal truths; it is a drama, powerfully depicting the adventures of a great hero; it is a love story, revealing with marvelous insight the workings of the human heart; it is an epic, collecting into a harmonious whole the myths and legends connected with the beginnings of Rome; it is a national poem, celebrating the history, customs, religion, and philosophy of a mighty nation. With all these phases, there is blended an element that lends to the *Aeneid* an especial charm. It is a nature poem, revealing, no less surely than do the Bucolics and Georgics, the poet's love of nature, his accurate observation, and his sympathetic interpretation of her various phenomena.

The earliest explanation of nature was mythological. Wholly unintelligible in itself, its various phases were endowed by primitive man with personality; the sun, the sea, the wind, were powerful deities; mountains, streams, and trees were demigods, nymphs, and dryads. As a better understanding of natural laws rendered this interpretation impossible, nature came to be considered the medium of communication between gods and men. All violent and unusual phenomena were messages of divine warning or wrath or prophecy. To learn the will of the gods, priest and soothsayer explored nature, and from the secrets thus revealed foretold future events. In Virgil's time this attitude toward nature was in its turn disappearing in the light of increasing knowledge. The conflict between science and religion had begun.

With the decline of reverence toward the gods, the Romans lost interest in natural phenomena. The cities were the centers of activity, where all men of ability, learning, and culture congregated. The days of Cincinnatus were past, the occupations of the country being relegated to slaves and stewards of the estates. While the Romans were fond of singing the praises of rural life,

their ideal carried with it much of the artificiality of the city. It included beautiful country houses, gardens laid out with geometrical exactness, flower beds, fountains, and rows of planted trees. It was a refuge, where they might find repose and quiet after the strenuous life of the city, that they sought, rather than the pleasures to be derived from the contemplation of the beauties of country surroundings. In the literature of that time nature formed merely the setting for human interests. There was no intimate relation between man and nature. While Virgil's poetry partakes of this general characteristic, yet here we find the beginning of the more sympathetic interpretation which forms the keynote of modern nature poetry. In his descriptions there is evident a tenderness, a deeper feeling, a delicacy of touch, that bespeak the true lover of nature. His early life was spent in the country and his gentle, sensitive temperament was well calculated to render him appreciative of the beauties of nature and susceptible to their influence.

How largely Virgil's descriptions of nature are borrowed from Greek poetry is a disputed point. Homer was fortunate in having a clear field for the exercise of his genius, nature herself being the only source from which he could draw his material. With Greek culture and learning, Rome adopted Greek literature, and all early Latin poetry was founded upon Greek models. Many of the nature passages, as well as other phases of the *Aeneid*, inevitably show the influence of the literature and learning with which the poet was so thoroughly familiar. If poetry had already beautifully represented a scene such as he wished to paint, the material was freely and frankly employed. Just as freely he imitated himself; several passages of the *Aeneid* are borrowed from the Georgics, and in more than one instance lines are repeated almost *verbatim* in the same poem. Yet even in the similes and descriptions most strongly resembling Homer's, we find more than a translation. There is infused into the clear-cut definite model a deeper feeling, a tender interpretation, that is distinctly Virgil's own. The *Aeneid* was written at Naples, where the poet had ever before him the changing seas and skies that play so important a part in the poem. The natural sur-

roundings, the wonder and delight of modern travelers, must have been as full of beauty then as now. In the neighborhood of Naples are laid important scenes of the poem. Lake Avernus and Cumae are there; not far away Aetna keeps guard over the Sicilian shore; Capri, with its grottoes and rocky crags, must have been familiar ground to the poet. In fact, there is scarcely a nature description in the *Aeneid* for which material could not be found within easy reach of a villa on the Posillipo.

The fidelity with which Virgil paints his pictures stirs the heart of the modern nature lover, and he finds himself wondering that his mistress can have changed so little in two thousand years! If, as some say, they are studio pictures, their truth to nature is even more remarkable. Where in all literature can be found a better description of the lightning than this—"A fiery rent burst by the trembling thunder clap runs with a gleaming flash among the clouds" (viii, 391)?

If Virgil's waves rise mountain high and their spray sprinkles the stars, so do the waves of the modern poet, to say nothing of those of the twentieth-century voyager! The traveler who has sailed between Scylla and Charybdis, disappointed in the expectation of hearing, on the one hand, the pounding waves, while on the other he skirts the edge of the raging whirlpool, is inclined to quarrel with the poet who has led him to indulge in the anticipation of so thrilling an experience. But Virgil's account of the fabled monsters guarding the straits voiced the universally accepted idea of the time, and its inaccuracies, if any, should not be laid at his door. The Tiber of the *Aeneid* is an anachronism; but in a poem of the imagination it is quite within the poet's prerogative to substitute, for the unlovely stream of Aeneas' time, the beautiful river of Virgil's day. How delightfully does the goal of all their hopes and dreams welcome the weary voyagers—

> Aurora is shining from high heaven in saffron robes and gilded car. The winds subside; every breath is hushed; the oars dip into a motionless sea; Aeneas from the sea beholds a mighty forest. Among the trees, the beautiful Tiber, with its tumultuous rapids and yellow sand, is rushing into the sea. Everywhere birds, inhabitants of bank and stream, are flying among the trees and delighting the air with their songs (vii, 26).

When the Trojans begin their voyage up the stream—

> That the oars may meet no resistance, Tiber all through the long night calms his swelling flood, the hushed waters are so still that the surface lies smooth as placid pond or peaceful pool (viii, 86).

Here is indeed an intentional departure from nature, giving a charming touch of poetic fancy.

Among so much that is important and interesting, the nature element in the poem is often overlooked. Some of the more vivid descriptions stand out with a marvelous clearness—the roar of the tempest that drives the ships to Africa, the indescribable charm of the starry night on the shore, the crash of thundering Aetna, these have helped to make the *Aeneid* famous; but the innumerable brief passages, occurring everywhere throughout the poem,—as Tennyson says, "All the charm of all the Muses often flowering in a lonely word,"—do not so surely arrest the attention. Pages of description could not be more effective than some of the swift touches. False Simon hid, "skulking in the sedges of a swampy lake" (ii, 135). The Greek ships, under the protection of the gods, return to the fated city "through the friendly stillness of the silent moon" (ii, 255). The faithful helmsman, thrown into the sea by the baleful influence of the god of sleep, clings to the broken rudder "mid the boundless waste of raging billows" (vi, 355).

Many and varied as are the nature descriptions in the *Aeneid*, a picture is never introduced merely as an embellishment of the poem. That nature has a value in itself and is worthy of attention for its own sake is purely a modern notion. Each nature passage serves a definite purpose; many descriptions form an essential part of the narrative; and they are never so extended as to interrupt the thread of the story or draw the attention from the purpose in hand. No other phenomenon of nature plays so important a part in the action of the poem as does the sea. It appears in all phases. We can feel the fresh bracing wind and the damp of the salt spray in—"The ships plow with their brazen beaks the foaming brine" (i, 35), and "The wind fills our sails and we scud over the foaming sea" (iii, 268). Different is

this: "The sea is calm, the light-whispering breeze lures us to the deep" (iii, 69). But more often the sea assumes a hostile aspect. The most elaborate nature description in the *Aeneid* is the account of the storm in the first book. No translation of this or any other passage can do justice to the original, so exquisitely do sound and rhythm suit the thought. Perhaps a prose rendering better preserves the spirit of the text; lines not necessary to the nature pictures are omitted:

> The tempests have fallen upon the sea; from the uttermost depths, they stir up the whole ocean; from east and south and southwest, with their incessant blasts, they roll huge billows to the shore; now are heard the shouts of the men, the creak of the rigging. Quickly from the eyes of the Trojans sky and daylight alike disappear in the clouds; black night broods over the deep. Thunder crashes from pole to pole, and the heavens flash with the incessant lightning. Suddenly the limbs of Aeneas are paralyzed with chilling fear. . . . . As he speaks, a shrieking blast strikes the sail full in front and lifts the waves to the very stars; the oars are shattered, the prow swings round, and the boat rolls in the trough of the waves. Down crashes a towering mountain of water; some boats cling to the crest of the wave; beneath others, in the abyss below, appears a glimpse of land, the seething surf struggling with the sand (i, 84).

in comparison with this wonderful action and vivid description all other references to the stormy sea sink into insignificance.

Often the nature passages, not closely interwoven with the narrative, furnish the setting for human action, the scenery of the stage whereon the parts are played. In these passages there is noticeable a fine harmony between the natural surroundings and the state of mind of the actors. How skilfully is new misery added to the gloomy forebodings of Dido, in the loneliness of the dark night when "the lonely owl on the roof wails mournfully, and repeatedly utters its long drawn funereal notes" (iv, 463). As the wanderers pause at the threshold of Italy, the longed for land of promise—

> The sun sinks; the mountains are shrouded in shadow . . . .; deep sleep like dew refreshes our weary limbs. . . . . Now watchful Palinurus rises from his couch. He studies the wind, listening to the whispering breezes. He examines the stars as they glide through the silent heavens, Acturus, the rainy Hyades, the twin Bears, and Orion with his golden bands. Seeing that all foretell calm weather, he gives the clear signal from the stern. We

break camp and spread the wings of our sails for the departure. Now rosy dawn was putting to flight the stars, when far away appear the dim hills and low lying plains of Italy. "Italy"! Achates' glad shout rings forth; "Italy," responds the joyful chorus. . . . . The hoped-for breezes freshen; the harbor opens wide as we approach. The Temple of Minerva crowns the hill. Sails are furled and the prows turned to the shore. The harbor is hollowed by the easterly wave; on each side are jutting cliffs, white with the salt spray; between these hides the harbor. The rocks extend projecting walls like arms, as the temple recedes from the shore (iii, 507).

How sympathetically nature echoes the delight of glad hearts! The heavens are full of promise; the winds waft the ships to the shore, the land extends its arms in welcome. But the psychological conditions and, with them, the aspects of nature change. The following night finds the sailors weary and spent by the encounter with Scylla and Charybdis. They have lost their way and drift helpless and discouraged to the shores of the Cyclops. Here, too, is a sheltered harbor but unknown dangers threaten:

Near by, Aetna thunders with appalling crashes. Now it hurls to the sky a black cloud, with whirling eddies of fire, and licks the very stars with its fiery tongue. Now it belches forth rocks, wrenched from the bowels of the mountain, and with a groan hurls into the air molten stones, and boils up from the uttermost depths. . . . . As the giant buried beneath the mountain shifts his position all Sicily trembles and groans, and spreads a covering of smoke over the sky. In the dark shelter of the woods the Trojans endure the ominous sounds, but cannot see the cause. There are no gleaming stars, no sky bright with glittering radiance; clouds obscure the heavens; the profound night was keeping the moon in a dark storm cloud (iii, 571).

The gloomy night was prophetic of the terrors of the day. The haggard Greek appears with his dread tale of Polyphemus. The giant himself comes stumbling down in agony to bathe his wound, as the terrified mariners hurriedly push off their boats from the ill-omened shore.

While Virgil usually pictures nature in harmony with man, yet no artist understands better than he the value of contrast. Much more terrible is the mad frenzy of the suffering queen, since all the world is at peace:

It is night. Weary mortals everywhere are enjoying peaceful slumber, the woods and the restless waves are still, while the stars are gliding midway on their course; all the land is at rest; the herds, the gaily colored

birds that frequent the transparent lakes and brambly fields, are wrapped in slumber under the soothing influence of the silent night, all their cares forgotten, their troubled hearts at rest. Only unhappy Dido cannot close her eyes, or draw into her fevered veins the calm of the midnight serenity (iv, 522).

It is with consummate art that the despairing gloom of the death chamber is relieved by the radiance of the rainbow. "Iris comes gliding down through the sky with dew-bespangled saffron wings trailing a thousand varied colors in the sunlight" (iv, 700). Similarly the dread regions of the underworld, the dark abodes of death, are momentarily illuminated by a glimpse of the world of trees and birds. The souls crowding about the Styx are "many as the leaves that flutter and fall in the forests with the first frosts of autumn—many as the birds that, driven in flocks by the approach of winter, fly from the deep to the land in search of a warmer clime" (vi, 309).

Nearly half of all the nature passages of the *Aeneid* are introduced in simile. Almost every phase of human life, reflected in the mirror of nature, finds its counterpart in tree, bird, and beast, in wind, flood, and fire. Aeneas, unchanged by the entreaties of the unhappy queen, is like "an aged oak, strong and vigorous, rocked to and fro by the blasts of the Alpine wind; it creaks and groans, its leaves are strewn in heaps on the ground, yet it clings fast to the rocks; as high as its head towers in the air, so deep it sends its roots down into the earth" (vi. 441). The movements of Mnestheus' boat in the race, uncertain at first, then sweeping on to victory, are like the flight of a dove "suddenly startled in a cave where are her home and her dear nestlings, she flies about, flapping her wings in terror, then glides through the tranquil air and skims along her liquid way with motionless wings" (v, 213). At the gate of Priam's palace, Pyrrhus appears, bright in his gleaming armor, "as when a snake, stuffed with poisonous food and bright in his new shining skin, glides from the cold earth into the warm sunshine; he lifts high his breast and twists his gleaming coils; the three forked tongue quivers in his mouth" (ii, 471). The serpent seems to have a peculiar fascination for Virgil. No other beast is described so

often or with so much detail. By far the greater number of similes represent violent phases of nature. Virgil does not revel, as Homer might, in the scenes of carnage, rendered necessary by his purpose— "so great a task it was to found the Roman nation." While the last books are replete with treachery and bloodshed, portrayed with all the harrowing details, it is with evident relief that he turns from the spectacle of men slaughtering each other to beasts in which such savagery is less repulsive, and to the fury of the elements where there is a touch of majesty and grandeur. With a furious rush, Turnus dashes through the intervening ranks, "as when, from the mountain top, a rock plunges headlong, torn off by the wind or washed down by the heavy rains or loosened by the lapse of ages, it crashes down the mountain side with a mighty impulse, bounding over the ground and rolling with it trees and herds and men" (xii, 684). After a pause in the strife, the battle between the Trojans and their besiegers is renewed. The ground is strewn over with darts. The shields and hollow helmets ring with the blows. The battle rages fiercely as when, "at the setting of the showery Kidstars, a fierce rain coming from the west lashes the earth, or as when a black storm cloud pours down hail into the sea while dread Jupiter with the southern blasts whirls the watery tempest and rends asunder the clouds enveloping the sky" (ix, 668).

But the poet finds the fittest representations of fierce warriors in bloodthirsty beasts. Euryalus slaughters his sleeping foes. "Like a lion raging through the crowded fold, mad with hunger, he mangles and drags along the helpless panic-stricken cattle, his jaws dripping with gore" (ix, 339). Turnus rages furiously about the walls, seeking a way of entrance, as when "a wolf, skulking near the crowded fold, howls outside the walls on a dark stormy night; the lambs, though safe under their mothers, bleat loudly in terror; the wolf, mad with fury, rages at the prey beyond reach; he is tormented with long-continued fasting; his jaws are dry and parched" (ix, 59).

Even in the midst of such cruelty and bloodshed, the gentle poet introduces circumstances that render the picture less painful. Fierce lion and skulking wolf are not actuated merely by the

desire of killing; they are obeying the first law of existence—self-preservation. We see the touch of tenderness that is so strong a characteristic of Virgil's temperament in the lambs pressing closely to their mothers as the wolves howl outside the fold. When a wolf snatches a lamb from the fold it is the mother that is uppermost in Virgil's mind. "She bleats long and piteously" (ix, 565). The same note is struck again, "when ravening wolves are driven forth on a dark night by the blind frenzy of gnawing hunger, they remember their famishing cubs left behind and eagerly awaiting their return" (ii, 355). As Virgil brings the mother love into his fiercest pictures of savage beasts, so in the midst of bloodshed and carnage he shows the devoted love of Nisus and Euryalus; and, when the noble youth falls, "the blood flows over his beautiful limbs, and his drooping neck falls on his shoulders, as when a purple flower, severed by the plow, withers and dies, or poppies, weighed down by the rain, droop their heads upon their slender necks" (ix, 433). Aeneas himself pauses mid the din of war, and, with the tenderness of a mother, bewails the sad fate of the hapless boy Pallas, while the lifeless body rests on the rustic bier, "as a flower, plucked by maiden's fingers, a sweet violet or a drooping hyacinth, retains its bright color and graceful form though severed from the parent earth that nourished it" (xi, 68). Thus does Virgil relieve the darkest pages of his poem with devoted love and the dainty beauty of simile.

Nature often serves as the medium of communication between gods and men. The white horses feeding in the meadow (iii, 537), the sow with her snowy litter (viii, 82), are omens of divine portent. Anchises, reluctant to leave the burning city, is at last convinced by the omen: "There is a sudden crash on the left, and from the sky a star falls and rushes through the darkness with a brilliant glare like a torch. It passes over the top of the house and we see it disappear in the forests of Ida, showing the way. Then glows the long trail of light, and all the places round about are filled with sulphurous smoke" (ii, 692). When Aeneas, misinterpreting the omens, built his city in Crete, "suddenly there came upon us a blighting pestilence, emanating from

the tainted sky, the death-dealing season, bringing pitiful blight upon the crops, and overwhelming the people with sickness and death. Sirius parched the barren fields, the leaves and grass were scorched and brown, the withering grain fruitless" (iii, 137).

We cannot but note throughout the poem that with a few exceptions violent destructive phases of nature mirror in similes the passion of man, or are called forth by the interference of the gods. Tempests on land and sea are sent at the behest of Juno. Scylla and Charybdis are greedy monsters whose delight it is to destroy unwary mariners. Aetna breathes forth the penal fires of a suffering giant. The most forbidding scenes are haunts of the gods. The entrance to Pluto's realm is "a deep cave, with wide-yawning mouth, rough with rocks, protected by a black pool and overhanging trees. Over this no bird could safely wing its way, such fumes, breathed forth from the black throat, rose skyward" (vi, 237). The refuge of fury is a spot "shut in by forests dark with dense foliage, in the midst a broken torrent roars among the rocks and winding chasm" (vii, 565). The retreat of Cacus, the son of Vulcan, is drawn with a vigor worthy the pencil of Doré. "The towering crag with overhanging rocks, huge piles of boulders strewn here and there, deserted stands the mountain abode, the fallen rocks have left behind them a mighty trail of ruin" (viii, 190).

As nature is disassociated with the idea of Deity, she assumes a more friendly aspect: "Evander is aroused by the kindly light, and the morning songs of birds on the roof" (viii, 455). Night brings rest and sleep to weary mortals: "The heavens revolve, from the ocean hastens the night, enfolding with its mighty gloom earth and heaven and the wiles of the Greeks; the Trojans throughout the city are at rest, their weary limbs in the embrace of sleep" (ii, 250). Very beautiful is the description of the harbor that welcomes the storm-racked ships to Africa:

> A deep bay, an island forms a harbor by the projection of its sides; it breaks the billows as they roll in from the sea and sends the rippling water on into the hollows of the shore. On either side are high cliffs, and twin crags tower to the sky; at their base far and wide the water lies calm and

tranquil. Above is a background of waving woods, a dark, overhanging forest with bristling shade. Underneath the jutting cliff that faces the sea is a retired cove, with fresh water and seats of living rock (i, 159).

How alluring, after the fury of the tempest, is the calm of peaceful haven, and how in harmony with the relief and relaxation of weary sailors, are the shady woods, and the cool quiet of the cave with its trickling spring. Could nature show a more friendly aspect than is afforded by this beautiful glimpse of the moonlit sea: "The night breezes blow. The fair moon shows the way; her rippling light gilds the sea" (vii, 8). The poet lingers with delight over the bower of the sleeping Ascanius, "where the soft Amaracus enfolds him with its flowers and sheds about him its fragrant shade" (i, 693). It is on such scenes as these that the poet loves best to dwell. We find here the delicacy of touch and the grace, that are such marked characteristics of Virgil's poetry.

There may be detected in the nature passages a faint echo of that minor key which is so evident in other phases of the poem, the strain that led Tennyson to say—"Thou majestic in thy sadness at the doubtful doom of human kind" ("To Virgil").

There is a tinge of melancholy in "Aurora sheds her genial light on suffering mortals, bringing back again trials and toil" (xi, 182), and an element of sadness in "Night hovers over us with dark overshadowing wings" (ii, 360). As the Retulians gazed upon Aeneas, the radiance of his golden armor was like the glare "when, on a clear night, the comet glows with a gloomy red; or the blaze of the Dog Star, foreboding drought, with sickness and death, saddens the heavens with its ominous light" (x, 272).

While there are many beautiful effects of light and shade, the element of color rarely appears in Virgil's nature pictures. No natural phenomenon is more gorgeous than the dawn, but, of the many references to Aurora, only four include color. It is not surprising that trees and grass are seldom described as green, since the prevailing verdure of the region in which the poem is laid is dull in tone; but it is not so easy to understand why, with the delicious blue of the Mediterranean ever before him, the

poet should not more often refer to the sea as blue. The most vivid coloring is seen in the serpent that glides peacefully about the tomb of Anchises: "Its back is flecked with dark green, its scales glow with a golden sheen, and, like a rainbow, send forth in the sunshine a thousand changing hues" (v, 84).

There are in the *Aeneid* traces of the early mythological view of nature. Iris, gliding down from the sky, is partially identified with the rainbow. Rugged Atlas is a huge giant, balancing the heavens on his head, while "dark clouds ever veil his pine-crowned head. He is buffeted by wind and rain. His shoulders are covered with a mantle of snow. Rivers flow from his hoary chin and his unkempt beard is stiff with ice" (iv, 246). More often we find the interpretation that makes Nature a tool in the hands of the gods. There is also clearly evident the beginning of the feeling that in Nature there is a friendliness and sympathy toward human life. We may detect the faint prophecy of this in the dream tree of the underworld with aged arms outspread (vi, 283). It is hinted at in the water and woods that stand marveling at the unaccustomed sight as the Trojan barks glide by up the winding river (viii, 90). But perhaps the nearest approach to this interpretation is in the simile that compares the fall of Troy with the fall of a lofty ash on the mountain top; hacked by the repeated blows of the woodman's ax, "ever it threatens and shakes, and nods its quivering leafy head. Gradually overcome by its wounds, it has given a death groan, and has fallen crashing on the mountain side" (ii, 626). While there are distinguishable here faint traces of the feeling that Nature has a semi-conscious entity, it is left to modern poets to find in Nature a sympathetic companionship like that of a loved friend. Yet it is not surprising that strange myths and legends clustered about the memory of Virgil, and that the *Aeneid*, during the Middle Ages, was regarded with an almost sacred awe; for the gentle poet of olden times seems to have been endowed with an insight into the secrets of the universe that was far in advance of his time.

WANTED—AN ADDITIONAL COLLEGE REQUIREMENT IN ENGLISH

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"Aye, men may wonder as they scan
A living, thinking, breathing man
Confirmed"—another test to plead.

And this "man" is no inexperienced girl but a woman who has wrestled with the college requirements in English for fifteen years and more. In by-gone days she has led fainting troops across the unpronounceable deserts of Siberia in the rear of a fleeing Tartar tribe. She has listened to the thrilling periods of Webster's Bunker Hill oration as rendered by a girl who couldn't read three consecutive words correctly, even when her mind was on them, and whose mind was more than nine-tenths occupied in wondering whether or not the boy across the aisle would ask her to dance with him that evening at the "Sophomore reception." Then, on the other hand, this teacher remembers some rare and wonderful moments in her classes when, for instance, a girl has read "Home they brought her warrior slain," with such feeling and expression that schoolroom surroundings were forgotten and class and teacher alike felt the hush of the chamber of death and the relief that came when the mother's tears flowed over the dead man's child; or when some boy with a deep voice and a manly intelligence has read the peroration of Burke's speech on Conciliation grandly, bringing out all the nobility of thought and language, till we saw the vision as it came to the mind of the great statesman, of a mighty and generous people abandoning petty questions of interest and of policy and elevating their minds to the greatness of that trust to which the order of Providence called them. Such reading is worth forty pages of notes and a hundred examination questions.

Have you guessed the additional requirement for which I plead? It is a test in reading aloud. We teachers can get up

little enthusiasm over the subject as matters stand now, and, sorely against our consciences, are often obliged to neglect this important branch of education. But if there were a test to be passed, or if certificate rank of 80 must be attained in reading as in other subjects, there would be a renewal of interest in the oral interpretation of the masterpieces we are called upon to teach, which would be of incalculable value to our students, whatever calling in life they follow.

Then, too, we might thus gain time and opportunity to train the "American voice" whose strident tones are so severely criticized by foreigners. A few years ago in Paris, in a crowded room of the Musée de Cluny, I heard the piercing tones of a feminine voice saying "Where's the old Roman swinging bath? I can't find it anywhere." All turned to look at the speaker, a very pretty young American girl, who tore across the room, well pleased to be the object of attention, and quite unconscious that her compatriots were ashamed both of her ignorance and her bad manners. She had misread swinging for swimming, it appeared.

This girl, or her prototype, appears at every corner in Europe. On behalf of her teachers I plead for a better chance to train her in reading and speaking—even at the expense of sparing her a few half-digested facts.

This brings me to the practical question which stands like a lion in the path. Where shall we get the time? But you remember that when Christian reached the lions he found that they were securely chained. Whether from lack of faith on our part or some other cause our lions are not often thus fastened but ramp about, ready to devour the neglectful, so I would cannily lasso them beforehand. I would remove from the present requirements in English, to a very large extent, the study of the lives of the authors. In most cases these are none of our business, anyhow. To be sure our students must know something of the authors' place in and influence upon literature, but I am convinced that we could cut out with great advantage much of the study of their private lives. If we could put the question to the authors themselves, who can doubt what their answer would be?

Even the pure and great-souled Milton might well quail before the vision of a generation of school girls criticizing his treatment of his daughters; while as for the rest, is there one among them who would not gladly choose oblivion in regard to some points, at least, of his career?

Have you never heard Macbeth's speeches so murdered that Duncan was half avenged? Have you not heard the "Passing of Arthur" given with such halting and stumbling that your soul cried out within you for time to teach that boy to read, or authority to condition him because he couldn't read? I believe we are failing in our duty to the rank and file of our pupils in not demanding of them the ability to read aloud intelligently what they have studied, as well as to *write* the answers to questions upon it.

There is a tradition that when Daniel Webster presented himself for admission to Phillips Exeter Academy a New Testament was given him with the request that he read aloud a passage. He read it in his grandest manner with "God-gifted organ voice" and was at once admitted to the school without further examination. I am not quite so radical as to advocate admitting a student to college—not even an embryo Daniel Webster—in Algebra and Plane Geometry, because he can read his mother tongue with correctness and intelligence, but I do believe that the ability to read thus would be more useful to our girls and boys, and a more reasonable thing to demand of their immature youth, than to expect them to write an account of the psychological development of the character of Godfrey Cass, or the history of Sir Walter Scott's financial difficulties.

COMMERCIALISM: THE EDUCATOR'S BUGBEAR

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The present period has long rested under the charge of commercialism. The commercialistic spirit is supposed to motivate most of the activities of adults and to be rapidly degrading the ideals of youth and maiden. In support of the latter emphasis is laid on the very large percentage of both grammar-school and high-school pupils who drop out to work before completing the course, and to the frequency with which pupils ply their teachers with such questions as, "What good will Latin do me?" "How will Greek History help me earn a living?" "Since I intend to be a housewife, why should I study algebra and geometry?" "Of what good is Greek anyway?" And to what other cause, they say, can we impute the phenomenal spread of the technical courses and the corresponding abatement of interest in the cultural or disciplinary work? Frantic appeals are made to the entire teaching force to do all it may to stem this so-called progressive degradation of ideals in the young.

But have we made a correct diagnosis? Have we no sympathy for the boy when he is charged with commercialism simply because he wants to know the value of the things he studies? May we not defend his *motives,* if not his *judgment*? For myself, I must confess that I respect him more than I do the slavish spirit which prompts another boy to swallow the regular courses simply because others do, or because he fancies it will give him social standing as an educated person, or because of a conceit that prides itself on knowing things which others, with fewer advantages, do not know.

In point of fact, although the boy has no adequate perspective for judging educational values, his point of view is, nevertheless, in harmony with the best educational thought of the times, for the greatest contribution of modern educational psychology is

the stress it lays on the value of volitional education—the training that looks to action. Education should be both afferent and efferent, and any course of study which cannot by any stretch of the imagination be seen to promise fruit in action had better be omitted.

The hand and the brain are not separate organs, but two ends of the same mechanism, and their influence is mutual. Viewed biologically, the one function of mental activity is to mediate behavior. Sensation, the primary form of all mental reception, exists only for the sake of movement, not for itself. In lower forms of life the mediation between sensation and movement is direct, consisting only of the reflex arc. As we rise higher in the scale of animal mentality the mediation becomes less direct: more and more of sensation is shunted off for *future* rather than for *present* effect, until finally, in the highest forms of human receptivity, the two ends of the primary circuit are so far lost to each other that the effects of acquisition on behavior are no longer obvious. It is at this point that we come to extol knowledge for its own sake. Educational psychology is now engaged in picking up the lost ends of this ancient relation and in defining the significance of each in terms of the other.

In other words, the educational spirit today is becoming highly pragmatic. The spirit of the times regards nothing as too sacred for the scrutiny of this philosophic method. We are beginning to judge religions by the conduct that is their issue. The ethicist receives scant attention except to the extent to which he throws light on the concrete duties of life. And likewise we desire a practical criterion by which to estimate the value of the elements that make up the school curriculum. Modern educational theory sees a real danger in divorcing the intellectual and volitional tendencies by a school training which neglects the latter. It would be altogether calamitous were our youth to receive an education so exclusively "disciplinary," or "cultural," that their practical tendencies were thereby blunted.

In Germany there is the rather anomalous problem of an *educated proletariat*. Thousands of graduates from the classical *Gymnasien*, which for the most part ignore the problems of real

life, find themselves misfits in the industrial and political world and drift about discontentedly until finally they contribute to swell the now formidable army of German socialists. Through the influence of the energetic emperor, the *Realschulen* are coming in to mend the situation, though they have to fight for every inch of ground they gain. But in this country our more practical sense has brought it about that few of our secondary schools dish out the formal studies to all indiscriminately. The result is that our high-school graduate more frequently finds a place in the world where he can expend his energies, not only to his own profit, but to the advantage of society as well. Indeed it would be greatly to the credit of our secondary educational system to bridge even more successfully than has yet been done the chasm that has always existed between school and life. Education, for most youths, should be an apprenticeship suitable for a busy practical life. When it becomes that, then its influence instead of stopping with the close of student days, will continue with increasing momentum.

The tendency, now plainly evident, to replace in part the formal education of the past with courses of a more industrial and technical nature betokens on the part of the school less a spirit of commercialism than a profound awakening along the lines of educational theory, and, on the part of the pupil who gravitates toward the new courses as naturally as a plant seeks the light, nothing more than the finest of healthy-mindedness.

Indeed one may, with reason, venture the prediction that the future type of school throughout this country will closely resemble the best industrial schools now conducted for Indians and negroes; or, in other words, that it will combine the best features of the present educational system with the ancient and honorable system of apprenticeship. To produce something of value is a creditable ambition, and to give the opportunity to do so under favorable educational conditions will solve the problems of interest and attention, bridge the gap between school and life, and happily render obsolete the foolish question of "soft pedagogy."

DISCUSSION

PRESCRIBED VOCABULARY IN COLLEGE REQUIREMENTS

To the Editor of the School Review:

My article in the January *Review* was intended to be "unfavorable" not to Professor Lodge's book, but to the use which I thought it was being put to; and, for obvious reasons, I should never have written it, if I could have been assured of the commendable action which the Philological Association took at Toronto in referring, without mention of vocabulary, the question of uniform requirements to a representative Commission of Fifteen. But I was persuaded that the repeated advocacy in print of "the select list of 2,000 words" as the "corner-stone" of reform was intended to influence the action of the Philological Association; and since I do not believe in the principle of selection of the list recommended, and still less in the training likely to result from preparation for sight examinations with no responsibility for the meaning of words beyond those contained in a fixed list of isolated words, I felt it my duty to protest. I had no doubt that the middle-states people were as genuinely interested in uniform requirements as those who were more severely pressed by the examining colleges; but judging only from printed evidences, I made the mistake of taking them more seriously, perhaps, than they took themselves. In my haste I failed to detect one or two oversights in my paper which I should now like to correct.

Though I recorded Vergil's usage, I occasionally forgot to reckon it in my enumeration, so that once or twice my *H. S. L.* stands strictly for high-school Latin *prose;* and in the last group of words, which are *separately printed and numbered* in the open list, but are not individualized either in the select list of 2,000, or in black type, or in roman type, in Professor Lodge's book, some of my references show that "words not printed at all" in his book was a stronger expression than I meant. Participial forms like *legatus, adolescens,* etc., and adverbial case-forms like *quō, unā, verum,* etc., surely have an individuality distinct from the parent forms (from which I admitted they might be inferred. *Aequitas* and *potens* were inadvertent slips from the previous group).

Even if Professor Lodge's list was made from authors read in nine-tenths of the high schools in this country, that does not commend the principle of permanent prescription of those portions. Words selected according to their usage in the complete works of the authors read are serviceable for readers of prescribed portions as well; but words selected

according to usage in prescribed portions cannot be so serviceable for readers of Latin at will. The objective is Latin at sight.

In trying to avoid an unprofitable emphasis on grammar and syntax, let us not encourage an equally unprofitable emphasis on isolated vocabulary. "Words when isolated (out of relation)," I said in the preface to my first edition, "have less vitality than when read in their context;" and (p. *81*) "the best way to acquire a vocabulary is to read and read and read —record important new and difficult words in individual notebooks—but read and remember." Some words that occur oftenest frequently do not get remembered; the words that occur seldom—that last tenth—often require disproportionate attention. As *memory-tests* whether the words best worth knowing *have been* acquired from *live reading*, these lists seem to me to be of most promising usefulness; but to recommend them for initiatory or exclusive service, and to involve them in admission requirements, is, I fear, to expose them, with their inevitable limitations, to grave abuse.

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January 23, 1909

A SUGGESTED MODIFICATION OF THE MARKING SYSTEM

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Machinists and manufacturers are never inclined to preserve a machine that has done good work in the past when it is no longer capable of doing anything more than run itself without producing the results for which it was built. The case is quite otherwise with social organizations which are, so to speak, the machines by which society does its work. Every society is at first organized in such a way as more effectually to accomplish certain ends than it has been possible to attain by previous organizations. There is likely however to come a time in the history of such organizations when most of the energy of its members is directed toward keeping the society running in its accustomed way with less and less attention to the accomplishment, by the most economical means, of the ends for which the society was organized. This tendency is especially strong in many old organizations and has often been noted by reformers of churches and schools.

These general thoughts are suggested in a concrete form by the article "Elective Subjects in the High-School Curriculum" by Professor Bagley in the November *School Review*. It is evident from his extensive inquiries,

as well as from previous studies that have been made of the elective system in colleges, that the question of the practical value of the elective system is greatly complicated by an educational device used in all our high schools and colleges. I refer to the giving of marks in all subjects pursued in the high schools, colleges, and universities. I call this a device because it has no necessary relation to the educational process and because it originated when subjects of study were supposed to be uninteresting in themselves and to need to be made artificially interesting. That it is not a necessary factor in the system of education is illustrated by the fact that the most cultured people of ancient times, if not of all time, the Greeks, used no such device in their educational system.

It is not the intention of this article, however, to discuss the general value of marks and degrees in an educational system but to suggest that whatever the value of the system, it should not be held to in cases where it has least value and may do the most harm. We should not allow the marking system to determine our educational policy but educational policy otherwise determined should decide when the marking system may or may not be used with advantage.

It is admitted even by the most strenuous advocates of the marking system that it best serves its purpose when the marks are given with as great care and accuracy as possible. It is also admitted by everyone that tests of the work done may be made much more accurate in some subjects than in others. This fact is strikingly illustrated by the objection of one of the Oxford professors to the introduction of English into the university course on the ground that it would be impossible to mark students in that subject. From the broader view of education this seems like a very foolish remark, but it may be questioned whether it is not wiser than the policy of introducing literature into the curriculum and then attempting to mark each student in that subject just as he is marked in other subjects. Such a policy inevitably results, as is pointed out by Professor Scott in the January *Review*, in his discussion of "What the West Wants in Preparatory English," in emphasis upon the least valuable portions of literature.

It will be admitted that the exact sciences and the dead languages, when pursued either for the purpose of general intellectual discipline or for practical use in various occupations, may be taught successfully and the results of teaching tested with much greater accuracy than is possible in subjects that are taught chiefly for their cultural value, meaning by culture, effects upon the emotions and the will as well as upon the intelligence.

Most persons will at once admit that literature, art, and music should be regarded as cultural subjects, while nearly all would place history in the same class. As to other subjects there would be considerable differences of opinion but a little thought will show that whether they are predominantly cultural or not depends largely upon the aims and methods of the teacher.

It ought not to be difficult to secure unanimity among educators in regarding at least a few subjects as cultural and not well suited to the application of the marking system. If such an agreement can be secured upon a few subjects what objection can be offered to removing them from the influence of the marking system? Let courses of study in high schools and colleges be arranged with the understanding that one or more of those belonging to the cultural group shall be among the required studies for every student, but that no marks shall be given in such subjects, although credit will be given for the time spent on such subjects in granting degrees of all kinds. If this were done the teachers of such subjects would be freed from the burdensome task of testing and grading the work of pupils and be permitted to devote their energies to interesting and teaching their pupils in such a way that development in those lines would not then stop as it now so often does when a diploma is received.

The advocates of the marking system and of higher standards in education ought not to object to this plan because only that portion of education which admits of least thorough and accurate testing and grading is removed from the application of the system. The tendency to apply rigid and exact standards to cultural subjects and loose and ineffective standards to other subjects would be reversed, with advantage to all phases of education.

If such a system were used for a while the time would probably come when some subjects would be taught by one teacher for cultural ends, no marks being given, while the same subjects would be taught for practical or disciplinary ends by other teachers and the pupil's work carefully graded. We should then have in part a practical solution of the problem of the educational value of various subjects, the value being determined more by the aims of the teacher than by the name of the subject. A still more important result would be that teachers would be encouraged to formulate more definite aims in teaching their subjects and to devise the best methods of attaining these ends unhampered by the marking system.

EDITORIAL NOTES

THE PROCEEDINGS OF THE NATIONAL EDUCATION ASSOCIATION

The *Addresses and Proceedings* of the Forty-sixth Annual Meeting of the National Education Association at Cleveland, in July, 1908, has just come from the press. It is perhaps too much to ask the readers of the *Review* to peruse carefully all of its twelve hundred pages; but any teacher who has the time and the energy for it could hardly fail to be interested in and profited by making himself familiar with most of what is presented in this volume. To be sure its contents are greatly diversified; they cover practically the whole range of contemporary educational thought and practice. But some advantage will result to the reader, even though he be a specialist, in working his way through this labyrinth, for the experience will impress upon him the extraordinary complexity of our educational system, and the immense breadth of our educational interests. We predict that if some who see these lines respond to the suggestion offered them to acquaint themselves with the Proceedings as a whole, they will be surprised—to their benefit, too—at the remarkable activity which is manifested in every department of our educational régime.

To the writer of this note the addresses and reports given at the Cleveland meeting are as a whole somewhat superior in quality to those of most previous meetings. There does not seem to be much that is commonplace or platitudinous, although there is enough of this sort of thing to remind one of the typical hortative tendency of the educational spellbinder of yesterday. It is really worthy of remark that among all these papers, reports, and discussions there should be so few that seem mainly verbal, formal, and not quite in accord with the spirit and needs of the times. The discussion of such topics as The Function of Education in a Democracy, The School as a Means of Training Character, Moral Training in the Elementary School, and so on, does not appear to help us very much in respect to any of our present-day problems. Not but that these matters are of vital concern to us; but unless we can devise some new method of investigating them so that we can secure fresh facts and points of view pertaining to them, we cannot hope to have anything novel or effective said regarding them. The only platitudes in this volume that jump out at you as you read are found in the articles and discussions treating such subjects as those mentioned. We might add that the most unsatisfactory educational talking and writing these days—in this volume as well as outside—relates to moral training, character-building, ethical instruction, the establishment of "ideals," and the like. Our need in these respects is surely very great;

but we have not learned how to secure a body of genuine facts regarding the matters under investigation. We are trying to deal with the most complex and involved phases of human nature mainly by giving expression to our sentiments and aspirations, broken loose from anchorage in actual knowledge of the springs of conduct in a human being at different periods in his evolution, and his requirements for efficient social adjustment. With perhaps two or three exceptions all the papers and discussions in this volume treating the topics indicated are at least sentimentally good but scientifically valueless.

However, but a small proportion of the total contents of the book are of this character. Concreteness, definiteness, timeliness characterize most of the Proceedings. The great educational movements of the day have all received more or less careful and intelligent attention—industries in education; the physical well-being and training of pupils; the preparation of teachers; the peculiar problems of schools in the country, the village and the city; the elimination of non-essentials from the schools from top to bottom; economy in the organization and management of school work; efficiency in methods of teaching, and so on. One cannot but feel that those who planned the programme at Cleveland had in view the matters that most need earnest study in this country today; and it may be said without hesitation that, on the whole, competent men and women were secured to discuss the subjects proposed. The plan of appointing committees to study problems, so much in evidence at Cleveland, can be most heartily commended. Thirteen such committees submitted reports at Cleveland; and while these reports will not conclude discussion on the various subjects treated, much less relieve the unrest and discontent felt regarding them, still they are, as a rule, of considerably greater worth than the mere opinion of individuals. Some of the departments pursued the round-table plan of discussion, and it would seem that this ought to become more general than it now is in the General Association. The Department of Superintendence and the Council of Education have for some time followed this method, and with happy results, it appears.

It would be interesting and instructive to have the opinions of a number of readers of the Proceedings respecting the sections that show the greatest vitality, the keenest appreciation of the real problems confronting us in present-day education, and that reveal the most alert sense for valid and relevant facts, and principles founded thereupon. It is probable that each reader would in some measure be influenced by his own special interests, which might operate in two ways, either to make him more appreciative of vital discussion pertaining to his specialty, or more critical of what to him might appear to be commonplace treatment of perfectly well-understood principles, whereas to others the discussion might seem to be reasonably fresh and helpful. The present writer has endeavored to purge his thought of preconceptions regarding the kind of educational discussion

that is most worth while to-day; and in this frame of mind it has appeared to him that the following departments of the Association, as represented in the Proceedings, are particularly vital: Superintendence, National Council, Kindergarten, Normal Schools, Music, Child-Study, Physical Education, Rural and Industrial Education. The papers in these sections seem, with very few exceptions, to be devoted to the presentation and interpretation of concrete data which have been gathered with due regard to the requirements of effective method. There are such papers in most if not all the sections; but there are papers of a contrary sort also in a number of the sections. The normal-school people seem to be aroused more than any one else; and while it is probable they have launched out upon tempestuous seas which are likely to occasion them trouble before they reach port, still it is good news to hear that they are awake anyway. It is a pity, though, they did not adopt resolutions at Cleveland which would forever commit them to the glorious work of studying the problems of elementary education and the efficient training of teachers therefor as the most pressing need to-day in American education. But they have given their reasons for not doing this, and any interested person can look them up, and judge for himself whether they are the expression of an earnest desire to advance the theory and art of teaching, or only to become second-rate colleges, thinking that 'tis nobler to teach calculus or Goethe or Anglo-Saxon than child psychology and the art of instructing young minds effectively and economically.

It speaks well for the Cleveland meeting, and the trend of things in the National Education Association that a man of G. Stanley Hall's psychological and educational build played the leading rôle perhaps. President Hall seems to satisfy the pedagogical hunger of educators as hardly any other man among us can do. And this, we repeat, is a sign of professional health. It means that teachers like to get at facts, and lots of them, when any topic is under discussion; and they wish to have them presented in a vivid and effective manner. It means further that they do not care for high-sounding platitudes or general, vague speculation about human nature and education. Altogether, we find ourselves in an optimistic frame of mind as we survey the work and tendency of the Association as portrayed in this volume of Proceedings.

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BOOK REVIEWS

Beginnings in Industrial Education and other Educational Discussions. By PAUL H. HANUS. Boston and New York: Houghton, Mifflin & Co., 1908. Pp. 199. $1.00 net.

We have here eight addresses and articles—five on industrial education and three discussing "Professional Preparation of High-School Teachers," "School Instruction in Religion," and "The Country Schoolmaster in Bavaria." Almost the first gun in the present industrial education campaign was fired when Professor Hanus presented the material given here on "The Industrial Continuation Schools of Munich" printed first in the *Boston Transcript* and reprinted in the *School Review*. The appointment of the Massachusetts Commission a little later, with the author as chairman, gave an impetus to the movement throughout the country and the commission's reports, with the chairman's missionary addresses, have furnished us the first substantial material upon the subject. This development has taken so much space in educational and other periodicals during the last two years that it is needless to undertake here to present the line of thought as to the kind of industrial school needed, the relations of industrial education to social progress, etc. It is a help to have these miscellaneous presentations brought together at the time when the first excitement of the revival is over and men realize the necessity of taking their bearings before going farther.

The report of the Committee of Seventeen on the professional training of high-school teachers has not received the attention the subject deserves and the publication in this volume of Professor Hanus' contribution to it may well lead to further discussion of the issues stated in it.

In "School Instruction in Religion" the propositions maintained are: "(1) Formal or explicit instruction in religion in the public schools is undesirable, unnecessary, and, in most cases, legally impossible; and (2) Religious education, including detailed instruction in the Bible, is the duty of the Church." One may feel that his arguments are in some cases too much an appeal to expediency, but the chapter will be worth thinking over. There is much in it that often escapes the attention of the programmes of the Religious Education Association. The aims of moral instruction, as stated on p. 160, bring into that field phases of life usually left in the fringe of consideration. The judgment expressed as to the ineffectiveness of religious education in Germany today, and in America a century ago when it was "universal" here, is one of the most valuable parts of the chapter.

The Jew is mentioned but once, I believe. The recent experience of a New York City minister, when called to account by the Hebrews of that city for urging the Christianizing of the immigrant, and his statement that he had meant helping the immigrant to a moral life rather than to the acceptance of technical Christianity, leads one to wonder whether this increasingly powerful element in

our society will not contest some of the positions taken by Professor Hanus with reference to this as a "Christian" nation when the issue becomes worth their while.

"The Country Schoolmaster in Bavaria" is a clear setting forth of actual conditions in the rural schools of that interesting country. Seldom does the visitor bring away so suggestive an account of what he has found.

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Ethics. By JOHN DEWEY AND JAMES H. TUFTS. New York: Henry Holt & Co., 1908. Pp. xiii+618.

This review will try to give a conception or interpretation rather than a summary of the book. Only some of the most striking and significant features can be noted.

1. It has a practical aim. This is revealed in the first sentence of the Preface: "The significance of this text lies in its effort to awaken a vital conviction of the genuine reality of moral problems and the value of reflective thought in dealing with them." The attempt to get the student to see and appreciate the value for life of the study of ethical theory may not be new, but in no other textbook has this point of view so completely dominated and unified the whole method of treatment.

2. The book observes the right pedagogical relationship between the concrete and the abstract. The whole mode of treatment is one which gives to the theory of ethics a central and mediating position between the unreflective practice out of which it grows and the more highly controlled ethical conduct which results from the reconstruction of life and of society in accordance with the more fully developed theory. This is one of the most characteristic features of the book. It is definitely marked by the division of the text into three parts, as follows: Part I, "The Beginnings and Growth of Morality;" Part II, "Theory of the Moral Life;" Part III, "The World of Action."

It is in not supplying enough of concrete material at the outset that textbooks in ethics too often fail. The student has not been made conscious of any need of defining his ethical concepts more sharply. The problem of ethical theory seems arbitrarily thrust upon him. The dynamic aspect of motivation is lacking. This textbook undertakes to supply motivation for ethical theory by a study of the growth of ethical theory among primitive races and earlier civilizations. In this study the student can see under actual concrete conditions that the ethical notions emerged and became more highly rationalized and socialized as a necessary and vital part of the process of rising from a lower to a higher level of life. The study of three typical civilizations in detail—the Hebrew, the Greek, and the early modern—further emphasizes this truth by showing that the moral development is at the same time in terms of the characteristic problems of a particular civilization and yet in all cases a movement in the direction of a more deeply personal and a more widely social type of morality. If ethical theory has had a vital function to perform in other civilizations, there is some

sense in reflecting upon the problems of morality in our day, and also of trying to apply the results of our reflection to the solution of those problems.

3. The theoretical portion of the book is based upon a complete and dynamic psychology of the self. The analysis begins with the voluntary act. Its psychology includes intellect, feeling, and will as inseparable functions no one of which can actually be isolated from its relations to the others. The key to the reader's understanding of a large part of the discussion of ethical theory is to be found in this functional psychology of the complete self. It is used repeatedly to break down false distinctions which lie at the basis of various historic systems such as hedonism, utilitarianism, and rationalism, and to show the fallacies and ambiguities which result from false isolations of different aspects of the self.

4. The criticism of historic systems is constructive. The effort is made to show what every one of them has contributed of definite and positive value to the progress of ethical science. The discussion is thus neither narrowly biographical nor merely destructive, but it is rather interpretative and broadly constructive in character. This constructive criticism of the historic systems, taken together with the study of the genesis of morality which has preceded, can hardly fail to make the student feel that ethical principles are a matter of real growth and evolution and that they always have been and still are a vital and necessary factor in man's control over the forces which are most intimately working in the direction of a higher and better type of civilization.

5. The discussion of current social and economic problems in Part III. is perhaps the most striking and in some respects the most daring portion of the whole book. For the average reader who thinks about public questions it is probably also the most interesting. Many of the problems are frankly recognized as unsettled; but no one can help getting a deeper insight into the ethical problems of our day from this attempt to interpret and evaluate them in the light of a long developing and still growing ethical theory.

6. The book is markedly democratic and optimistic in spirit. Its democratic spirit is particularly noticeable in all references to the status of woman and to the problems of industry and the laboring man. The standpoint is that of the psychology of the complete social whole. The optimistic tone of the book is inherent in part in the view of morality as dynamic and progressive. The process of deepening the personal and broadening the social moral consciousness is still going on. Even the magnitude of our problems may be an important factor in moral progress; for it operates to focus attention upon them and give them greater publicity and thus tends to deepen and to define more sharply the ethical consciousness of society.

7. The Dewey and Tufts *Ethics* is written in a style that is not above the comprehension and the pleasurable reading of the average reader interested in the deeper things of life. At the same time, it represents the most recent scholarship in psychology, sociology, and ethics. It ought to have a wide reading among all classes of citizens interested in the moral problems of our social, industrial, economic, and political life. For the teacher in particular that part of the book which is devoted to the beginnings and growth of morality ought to be rich in suggestions in its bearing upon the moral training of the child. But most of all the reading of this book should quicken and deepen his insight

into the nature of the ethical process and help him to feel more keenly the great humanizing function of his life-work.

8. The question may be raised as to the usability of this book as a text. To some it will seem rather large for this purpose. To my mind this is not a serious objection, even for classes in normal school. The more concrete portions of the book can be covered rapidly. In many cases they may be read outside of classwork for the purpose of giving the student perspective in the study of the more abstract and theoretical portions. Judicious selection on the part of the teacher, however, would be necessary in order to cover the ground in the time ordinarily allotted to the course either in college or normal school.

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Language Lessons from Literature and *Language, Grammar, and Composition.* By ALICE WOODWORTH COOLEY AND W. F. WEBSTER. Boston: Houghton, Mifflin & Co., 1905.

Modern English, Books I and II. By HENRY P. EMERSON AND IDA C. BENDER. New York: Macmillan Co., 1906. Pp. 258. $0.35.

Word Studies. By EDWIN S. SHEPPE. Richmond: B. F. Johnson Publishing Co., 1905.

Genuine self-expression is the end aimed at in the Cooley-Webster series. Training in language, say the authors, is a legitimate and necessary part of all school activities; no special practice lessons would be necessary if bad habits were not formed outside of school. Literature is valuable mainly in vitalizing the commonplaces of everyday life and in providing a standard of expression and an influence toward purity and precision in the use of language. The authors are wise in urging that very free use be made of the two books, the teacher choosing, adding, or adapting as the special need may require. They are surely right, also, in urging that grammar be not substituted for composition in the higher grades but applied in composition. The series as a whole is the work of teachers of breadth and experience, who have brought much good material together, which they handle with ingenuity and freshness. It is worth noting that one of the authors is a teacher in secondary schools. If the results aimed at are secured, the pupils will enter high school well prepared.

The "Modern English" series is similar in general plan to that by Webster and Cooley. The authors have less to say about their purposes, but they lay great stress upon the importance of securing the interest of the pupils and have tried to arrange their material so as to provide "cycles of interests." The exercises strike one, however, as somewhat formal and not likely to prove particularly fascinating. In fact, an atmosphere of plain schoolroom drill characterizes both books. The material is not specially thought-provoking nor abundant. Certainly the composition work in the higher book would prove inadequate for the seventh and eighth grades. The grammar lessons are isolated.

Sheppe's *Word Studies* is an advanced word book, for use in grammar

grades or in the first years of high school. It contains sections on pronunciation, spelling, and derivation and a brief dictionary. The author has had in mind, apparently, certain specific needs of the children, and has sought to prepare a practical manual for study and reference. To the child with no dictionary, it would be of positive value. Class exercises might, at times, be based upon it. But, as in so many similar books, the words chosen are not those which the learner will use or with which he will have difficulty. As for studies in derivation, anything more than incidental lessons in word composition would seem to be of doubtful value to children in the grades. With regard to such studies, as well as to the other topics presented, the book will prove very suggestive to teachers.

JAMES FLEMING HOSIC

CHICAGO NORMAL SCHOOL

Two Dramatizations from Vergil. I, "Dido, The Phoenician Queen;" II, "The Fall of Troy." Arranged and Translated into English Verse by FRANK JUSTUS MILLER. The Stage Directions and Music for the "Dido" contributed by J. RALEIGH NELSON. Chicago: The University of Chicago Press, 1908. Pp. 120. $1.08 postpaid.

The merit of Professor Miller's dramatization of the love story of Aeneas and Dido, which was published in 1900 under the title of *Dido—An Epic Tragedy*, has been proved by the continued demand made for the book. In response to this demand the author has published a second edition in which the same dramatization appears with no change of form but under a new title, *Dido—The Phoenician Queen*. This volume contains also a second dramatic adaptation from Vergil, the story of the Fall of Troy as related in the second book of the *Aeneid*.

Both of these stories are full of human interest and appeal to those universal elements of human sympathy that belong to all times and places. Filled with intensity of action and feeling, they are in their very nature dramatic; but when we read them in their epic setting, we seldom realize the completeness of their dramatic form. The student of Vergil ordinarily reads too few lines at a time to enable him to gain that breadth of view that alone can make it possible for him to see the unity of the whole story. In this the present volume will be found to be of great assistance and it is therefore of value not only to those who have not read the Roman epic but also to those who have.

In arranging and translating these tragedies, only such minor changes as were necessary have been made. The greater part of both stories remains, as nearly as the process of translation allowed, in the same form as that in which it was originally expressed, and Professor Miller's iambics are remarkably faithful to the spirit of the Latin hexameters.

The first tragedy, which is already familiar to many readers in its present form, is the account of the relations that arose between the Trojans and the Tyrians while the former tarried at Carthage on their way to Italy. It begins the morning after Aeneas and his companions, storm-tossed and weary, were driven to the shores of Africa, and ends when they took their departure from these same shores.

The second tragedy, which appears now for the first time, is only about half as long as the other, but, within its narrower limits, contains even more intensity of action, speech, and feeling. Beginning with Laocoön's warning to his fellow-citizens not to trust the wooden horse about which they had excitedly gathered, it continues the tale of the treacherous ruse of the Greeks to the bitter end of desolation and despair.

For actual presentation this tragedy offers many practical difficulties, and herein differs from the story of Dido, which has been staged with great success, but both dramatizations are valuable contributions to our modern interpretation of ancient life and our better understanding and appreciation of Rome's national epic. As a supplement to the study of Vergil, they will prove a source of great interest and help, for by giving the student a more comprehensive view of the poem he is reading, they will lead to a fuller recognition of its meaning.

The musical setting offered for the lyrical parts of the Dido, as well as the outline drawings suggested for its stage action and scenery and the reproduction of idealized figures and costumes, render the book very attractive and furnish valuable assistance to those who may wish to stage the play.

LAURA B. WOODRUFF

THE HIGH SCHOOL
OAK PARK, ILL.

High-School Course in Differential Calculus, First Lesson. By CHAS. N. SCHMALL, B.A. Published by the author, 89 Columbia St., New York, 1907.

Not a little has been said and written on the importance of introducing the elementary notions of the calculus into high-school work. Professor Klein of Göttingen is the leader of the movement in Europe to make the function idea the central, or organizing thought of mathematical work from the beginning of the gymnasial course through the university. A consequence of the acceptance of this point of view is that calculus, which is pre-eminently the instrument for dealing with the function idea, must be begun early in the work of the gymnasium. If this means anything to American teachers, it must mean that the fundamental concepts of the calculus should be given in secondary-school courses in mathematics.

Many teachers have felt the importance of doing this and have pointed out ways in which the beginnings might be made in this direction. Mr. Schmall in his pamphlet of twenty pages has shown how the fundamental principles of differentiation may be well started with students who know no more mathematics than algebra through quadratics, and plane geometry. The presentation is largely graphical and geometrical, and the meanings of things are made simple, clear, and interesting so far as they go. The lessons include the teaching of the ideas of continuity, differential coefficients, derivative of a function, and the interpretation of the derivative as the slope, or gradient of the curve, the rate of change of an area, and the rate of change of a function. The pamphlet purports to be the first chapter of a book on differential calculus for use in high schools. Many teachers who are sympathetic toward movements for

the improvement of mathematics in Europe will be interested to see how clear and simple this work may be made. Whether Mr. Schmall has done this as well as someone else may be able to do it is an open question; but there can be no question that he has attempted to make practical an idea which is of the first importance for a far-reaching improvement in the teaching of secondary mathematical subjects.

GEORGE W. MYERS

THE UNIVERSITY OF CHICAGO

The Administration of Public Education in the United States. By DUTTON AND SNEDDEN. New York: Macmillan, 1908. Pp. 601.

In the preface of this work President Butler distinguishes between the activities of the state, the American people viewed as an organized unit, and those of the government. "It is this governmental educational activity with which the present volume deals." There are thirty-two chapters treating such subjects as "Factors Favoring the Advance of Education;" "The National Government and Education:" "Local Units of Educational Administration;" "The Financing of Public Education;" "The Improvement of Teachers in Service;" "The Elementary Course of Study;" "The Administration of High and Normal Schools;" "Vocational, Physical, and Correctional Education;" "Educational Statistics;" "The Widening Sphere of Public Education," etc.

Professor Dutton in his Brookline work and in his *Social Aspects of Education* made an important contribution to the recognition of the wider social responsibility of school authorities. Professor Snedden has already given us the most valuable works we possess on correctional education and school records and statistics. The combination of the forces of the two men in this volume leads the reader to expect in it a work of unusual value.

The introduction brings together the names of important persons in American education, then follow the significant industrial and social conditions upon which schools depend, and the leading events in national, state, and local school development. There is scarcely a topic from ventilation to pensions, child labor, tuberculosis, festivals, and the school nurse which is not included. The treatment is descriptive and accurate. To one accustomed to the somewhat inspirational style of many works on school management this encyclopedic book will prove hard reading, for it is not intended for reading-circles or teachers' meetings. It is essentially a reference book. Fortunately there is an excellent index. The references at the end of each chapter bring into view practically all the material the ordinary student can have occasion to consult.

The inclusion of so large a range of governmental activity in matters pertaining to children will render the work of use to other social workers besides those employed in the school.

FRANK A. MANNY

WESTERN STATE NORMAL SCHOOL
KALAMAZOO, MICH.

Elementary Experiments in Psychology. By CARL E. SEASHORE. New York: Henry Holt & Co., 1908. Pp. xi+218.

This manual consists of sixteen experiments designed to accompany the introductory course in psychology. They have been selected and arranged with such care and ingenuity that no laboratory apparatus or supplies are required other than that which accompanies the book and such other materials as are easily secured by the student. Of the sixteen experiments about one-half are devoted to the senses and half to the higher mental processes; four are given to vision—visual after-images, contrast, the visual field, and visual space, and one each to auditory and tactual space, to cutaneous sensations, and Weber's law. Experiments in mental images, association, memory, apperception, attention, normal illusions, affective tone, and reaction time follow in the order named. The experiments are independent, but the order given is one which suits well the usual introductory course. The arrangement is also fortunate in that several experiments of distinct interest to the student but at the same time of considerable difficulty are found at the beginning, and notions of careful work and application may be secured at the start. The danger that the experiments be considered too elementary- or kindergarten-like—a danger which might possibly arise because of the simple means employed in many of them—is largely, if not wholly, avoided because of the care and thoroughness necessary for their successful performance and the very effective insistence of the text upon careful and honest work.

The statements and directions are notably clear, and concise, and the accompanying discussion and illustrations apt and illuminating. About half of the experiments may be performed individually; the rest need the co-operation of two students, one acting as subject and the other as experimenter. Two hours are required on the average for each experiment. Whether accompanied or not by the usual laboratory demonstrations, the experiments are devised with such excellent care and good sense that they will supplement very advantageously and prove a distinct addition to the first course in psychology. When laboratory facilities are available some of the experiments may be done advantageously with more exactness and with more elaborate apparatus, and others added or substituted.

There is every reason why the first-year student of psychology should secure some direct experimental knowledge of the subject as is the case in the introductory courses in other sciences. At present comparatively few students of psychology elect the experimental courses, and, as is very apparent, the usual laboratory demonstrations, however elaborate, do not take the place of even very simple experiments on the part of the student. A trial of the manual which the writer made in an introductory course in the summer session evidenced that the experiments were practicable, interesting to the university student, and that they may be carried out successfully by him independently and with but little direction or supervision. The book should prove of particular value to normal-school classes and to those of institutions not possessing laboratory equipment in securing for the student the first-hand knowledge of the subject which comes from direct experimenting.

W. F. DEARBORN

UNIVERSITY OF WISCONSIN

First Course in Algebra. By ALBERT HARRY WHEELER, Teacher of Mathematics in the English High School, Worcester, Mass. Boston: Little, Brown & Co., 1907. Pp. 664. $1.15.

Few teachers will agree with the author that "this book may be used by students who have completed a course in arithmetic but who have not previously studied algebra," unless the subject is taken late in the high-school course.

The book covers 664 compactly printed pages the unusual length being due partly to the inclusion of a very large number of examples—over 8,000—partly to the presence of topics not ordinarily treated in high-school texts, but chiefly to a rather elaborate analysis of each topic. Much space is given to definitions, including such terms as operand and dimension (literal factor of a term). Sixteen pages are devoted to highest common factor and nine pages to an explanation of long division. A chapter of eighteen pages is devoted to general principles governing transformations of algebraic equations before any work in the solution of equations is given. The first problem involving the use of the equation is solved on p. 177.

The language is too formal to be easily comprehended by the average pupil in the first year of high school; for example: "The resultant effect of several combined positive and negative quantities is equal to the numerical difference between the total positive and total negative effects, and has the quality or nature of the greater total."

Of the 8,000 problems, 3,000 are for mental (oral?) exercise. There is not sufficient variety in the problems to warrant such a large number. A few of the problems are drawn from physics and chemistry, illustrating such topics as chemical composition, falling bodies, the lever, and Boyle's law.

First Year in Algebra. By FREDERICK H. SOMERVILLE. New York: American Book Co., 1905. Pp. 208.

This little book is intended to serve as an introduction to the study of elementary algebra. It includes typical examples, rules, and exercises in the four fundamental processes with integral and fractional expressions, and in the solution of equations in one and two unknown quantities. Only very easy examples are given. With the exception of a few formulas, there are no applications of algebra to real problems. The book will be of service to the teacher who is training grammar-school pupils to perform simple exercises in formal algebraic processes and to solve easy ready-made problems. It will give the pupil little insight into algebra as an instrument of real service and of wider application than arithmetic.

WILLIAM E. STARK

THE ETHICAL CULTURE SCHOOL
NEW YORK CITY

The Pictorial German Course. By D. J. REES. Edited by HENRY BAUMANN. Boston: Little, Brown & Co., 1907. Pp. 145. $0.65.

This book consists of thirty lessons which are based upon the same number of pictures. Each lesson contains a description of a picture, questions based

upon this description, and a lesson in grammar. In the descriptions evidently no attempt has been made to develop the language slowly, as, for instance, to advance from the easy to the difficult; only the subject-matter has been considered. The pictures represent everyday activities beginning with the family in the living-room and ending with the jewelry store.

The grammar lessons seem to have no connection with the reading-matter; it is moreover quite difficult to follow the development of the grammar lesson in itself. In fact it is a little difficult to see the purpose of the book at all. Educationally it is of no value; it might, however, serve to give older students an everyday vocabulary. The book contains also a vocabulary and a list of strong verbs.

A. T. GRONOW

SCHOOL OF EDUCATION
THE UNIVERSITY OF CHICAGO

The Teaching of Modern Foreign Languages and the Training of Teachers. By KARL BREUL. 3d ed. New York: G. P. Putnam's Sons, 1906. Pp. 156. $0.60.

This is a book which every teacher of German or French ought to possess; it is the result of long years of experience, and the information which has been condensed in a little volume of 156 pages is enormous. When, in 1898, the first edition appeared, there was an absolute need for a practical guide for modern-language teachers in the English language. Breul's book satisfied this demand very well. In spite of other publications in that field, since, it kept its place as the best treatment of the subject.

Goethe's Faust. Erster Teil. Edited, with Introduction and Commentary, By JULIUS GOEBEL. New York: Henry Holt & Co., 1907. Pp. 384.

Professor Goebel's Faust edition is a masterpiece of literary research and without doubt one of the best books on German literature ever published in this country. Faust will be read only exceptionally in the fourth year of a high school but every teacher is advised to make himself acquainted with Goebel's Faust edition.

A German Science Reader. Edited, with Notes and Vocabulary, by WILLIAM H. WAIT. New York: Macmillan, 1907. Pp. 321. $1.00.

The reviewer has had an opportunity to use this book for classwork and can heartily recommend it. The selections are well chosen, and notes and vocabulary are excellent. The text consists of short articles on chemistry, physics, geology, mineralogy, astronomy, and anatomy.

A. C. VON NOÉ

THE UNIVERSITY OF CHICAGO

BOOKS RECEIVED

EDUCATION

Standards in Education, with Some Consideration of Their Relation to Industrial Training. By ARTHUR H. CHAMBERLAIN. New York: American Book Co., 1908. Pp. 265. $1.00.

The Life of Abraham Lincoln. For Boys and Girls. By CHARLES W. MOORES. Boston: Houghton, Mifflin & Co., 1909. Pp. 132. Illustrated. $0.25.

ENGLISH

Kidnapped. By ROBERT LOUIS STEVENSON. Edited, with Introduction and Notes, by JOHN THOMPSON BROWN. New York: Macmillan, 1909. Pp. 271. $0.25.

The Rhetoric of Oratory. By EDWIN DUBOIS SHURTER. New York: Macmillan, 1909. Pp. 309. $1.10.

The Standard of Usage in English. By THOMAS R. LOUNSBURY. New York and London: Harper & Bros., 1908. Pp. 309. $1.50.

Select English Classics. Edited by A. T. QUILLER-COUCH. Oxford and New York: Oxford University Press. Pp. 32–48 each. $0.06 apiece. The series comprise the following: Everyman; Robin Hood; Early English Lyrics; Selections from Browning, Coleridge, Milton, Matthew Arnold, Charles Lamb, Thomas Hood, Shakespeare's Songs and Sonnets, Keats, Shelley, Goldsmith, Wordsworth, Tennyson, Marlowe, Andrew Marvel, William Blake, Daniel Defoe, Izaak Walton, George Crabbe, Cowper, Bunyan, William Hazlitt, Napier's Peninsular War, Horace Walpole's Letters, Boswell's Johnson.

This series is commended to those who desire brief supplementary texts to use in connection with the study of the history of English literature, printed in clear type on unglazed paper, at a low price, and selected with rare literary taste. Each booklet is prefaced by a brief biographical introduction. The bare text follows, unexplained and undefaced by notes. It is unusual to find extremes of cheapness and distinction so happily combined as in this series.

LATIN

The Aeneid of Virgil Translated into English Verse. By THEODORE C. WILLIAMS. Boston: Houghton, Mifflin & Co., 1908. Pp. 456. $1.50.

High School Course in Latin Composition. By CHARLES MCCOY BAKER AND ALEXANDER JAMES INGLIS. New York: Macmillan, 1909. Pp. 464. $1.00.

FRENCH

Exercises in French Composition. By P. J. MARIQUE AND H. B. GILSON. Boston: Ginn & Co., 1908. Pp. 166. $0.45.

French Word-Lists. By B. FRANK CARTER. New York: Henry Holt & Co., 1908. Pp. 74. $0.25.

Yvan Gall: Le pupille de la marine. Par GABRIEL COMPAYRÉ. Edited, with Notes and Vocabulary, by O. B. SUPER. New York: Henry Holt & Co., 1908. Pp. 201. $0.35.

Lectures et conversations. (Illustrées de 70 gravures.) Par DUBOIS ET DE GEER. New York: William R. Jenkins Co., 1908. Pp. 151. $0.75.

Pensées et reflexions de La Bruyère et autres auteurs français. Compilées et arrangées par CORNELIA SISSON CROWTHER. New York: William R. Jenkins Co., 1908. Pp. 146. $1.00.

GERMAN

Modern German Prose. A Reader for Advanced Classes. Compiled and annotated by A. B. NICHOLS. New York: Henry Holt & Co., 1908. Pp. 296, $1.00.

SCIENCE

Essentials of Botany. By JOSEPH Y. BERGEN. Boston: Ginn & Co., 1908. Pp. 380. Illustrated. $1.20.

A Laboratory Course in Plant Physiology (2d edition). By WILLIAM F. GANONG. New York: Henry Holt & Co., 1908. Pp. 265. Illustrated. $1.75.

The Human Body and Health. An Elementary Text-Book of Essential Anatomy, Applied Physiology, and Practical Hygiene for Schools. By ALVIN DAVISON. New York: American Book Co., 1908. Pp. 320. $0.80.

Control of Body and Mind. Book Five, "Gulick Hygiene Series." By FRANCES GULICK JEWETT. Boston: Ginn & Co., 1908. Pp. 267. Illustrated. $0.60.

MATHEMATICS

Arithmetical Abilities and Some Factors Determining Them. By CLIFF WINFIELD STONE. New York: Columbia University, 1908. Pp. 101.

Standard Algebra. By WILLIAM J. MILNE. New York: American Book Co., 1908. Pp. 464. $1.00.

The Appleton Arithmetic, Primary Book. By J. W. A. YOUNG AND LAMBERT L. JACKSON. New York: D. Appleton & Co., 1909. Pp. 264.

HISTORY

The History of the United States. By NOAH WEBSTER. Old South Leaflet No. 198. Boston: Directors of the Old South Work. Pp. 24. $0.05.

MUSIC

Choruses and Part Songs for High Schools. By EDWARD BAILEY BIRGE. New York: American Book Co., 1908. Pp. 184. $0.65.

Songs Every One Should Know. Two Hundred Favorite Songs for School and Home. Edited by CLIFTON JOHNSON. New York: American Book Co., 1908. Pp. 208. $0.50.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

B., G. H. The financial status of the university professor. Liv. Age. 42:375–9. (F. '09.)

BAUGHMANN, JEANETTE G. Informal exercises in the primary grades. Educa. Bi-mo. 3:211. (F. '09.)

BOONE, CHESHIRE LOWTON. A course of study in manual training—6. Man. Train. Mag. 10:235–41. (F. '09.)

CAMERON, J. Y. The fourth modern Olympiad, London England, 1908. Amer. Phys. Educa. R. 14:40–5. (Ja. '09.)

DEWING, ARTHUR S. Some reasons for decrease of interest in nature study. Educa. 29:291–3. (Ja. '09.)

FAULKNER, ROLAND P. Some uses of statistics in the supervision of schools. Psycholog. Clinic. 2:227–33. (Ja. '09.)

GILBERT, M. B. Dancing: its applications and its advantages. Educa. Bi-mo. 3:212–15. (F. '09.)

GREENWOOD, J. M. Progress of pupils through elementary and high schools. Educa. 29:267–75. (Ja. '09.)

GRISWOLD, SARAH E. The importance of gymnastics in the first grade. Educa. Bi-mo. 3:209–10. (F. '09.)

HORWILL, HERBERT W. Democracy in American education. Liv. Age. 42:231–5. (23 Ja. '09.)

KINDERVATER, A. E. The international gymnastic and athletic competition at Frankfurt, Germany, and Olympic games at London, England. Amer. Phys. Educa. R. 14:27–39. (Ja. '09.)

LARNED, CHARLES W. Athletics from a historical and educational standpoint. Amer. Phys. Educa. R. 14:1–9. (Ja. '09.)

MCMANIS, JOHN T. Reciprocal relation between physical and mental education. Educa. Bi-mo. 3:226–33. (F. '09)

MULLINER, MARY R. Posture as related to efficiency of body and mind. Educa. Bi-mo. 3:201–4. (F. '09.)

[1] Abbreviations: Amer. Phys. Educa. R., American Physical Education Review; Educa., Education; Educa. Bi-mo., Educational Bi-monthly; Harp. W., Harper's Weekly; Liv. Age, Living Age; Man. Train. Mag., Manual Training Magazine; Psycholog. Clinic; Psychological Clinic; Pub. Lib., Public Library; R. of R., Review of Reviews; Sci. Amer. Sup., Scientific American Supplement.

OGG, FREDERIC AUSTIN. Harvard's new president. R. of R. 39:196–9. (Ja. '09.)

SCHRADER, CARL LUDWIG. Why physical education in the grammar school? Educa. Bi-mo. 3:205–8. (F. '09.)

SNEED, C. M., AND WHIPPLE, GUY MONTROSE. An examination of the eyes. ears, and throats of children in the public schools of Jefferson City, Mo. Psycholog. Clinic. 2:234–8. (Ja. '09.)

WELLMAN, JAMES. Harvard's new president. Harp. W. 53:27–. (23 Ja. '09.)